Physician
Resource
Planning
Committee

February 2000 Report to:

The Minister of Alberta Health and Wellness and The Alberta Medical Association

Setting a Direction for Alberta's Physician Workforce

## Physician Resource Planning Committee

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## **EXECUTIVE SUMMARY**

The Physician Resource Planning Committee (PRPC) was established under the Alberta Health and Wellness/Alberta Medical Association (AMA) Agreement. This report sets a direction that will guide Alberta toward having an appropriate number of physicians with the necessary clinical, research, teaching, and administrative skills, working in the right places to serve the needs of Albertans.

The phase of the Committee's work that occupied the past year involved three primary activities. First, the Committee identified current full-time equivalents (FTEs) in Alberta. Second, with the help of stakeholders, the Committee identified physician resources required for meeting health service needs in the next twelve months, and five years ahead. Third, a model was developed to predict the supply of physicians over the next five years.

In accomplishing these tasks, the Committee developed tools and a methodology that will be further refined, to help provincial stakeholders move toward consensus on physician resource questions. General agreement has not existed in the past that more physicians are required. However, in this report the Committee presents information supporting the need for increases in physician supply in the near and longer term.

Health authorities considered the impact of factors such as current and projected future physician workloads, growth and aging of populations, technology, physician practice preferences, reasonable service access and local service delivery opportunities in identifying future physician resource needs. Data collected from health authorities indicates an immediate need for approximately 333 additional physician FTEs (145 general practice and 188 specialist FTEs) across the province during fiscal year 1999-2000. This change represents a 7.3% increase to the current provincial physician workforce; however, the 7.3% increase does not take into consideration any new physicians registered in Alberta since data was collected in 1999.

During the next five years there is a total service need for an additional 1,329 physician FTEs (610 general practice and 719 specialist FTEs). If obtained, these additional physician FTEs would equate to an approximate 29% increase in physician resources during the period 1999-2000 to 2004-2005. On a compounded basis, this change represents an approximate 5.1% annual increase to physician resources in Alberta.

The PRPC has developed an Alberta Physician Resource Projection Model to compare the PRPC findings with physician supply and attrition trend information. This model allows the PRPC to project surpluses and deficits in future physician supply. The projection model demonstrates that there are potential deficits for a number of physician specialty/skill groups. Under a "status quo" scenario, in which there are no changes to current supply policies, and assuming no increases through the Part 5 emergency designation recruitment practice (Appendix I), the five-year physician resource analysis results show supply deficits in the following general categories:

- Supply deficit of 499 General Practice/Family Practice physician FTEs
- Supply deficit of 393 medical specialist FTEs
- Supply deficit of 141 surgical specialist FTEs

been used to test various scenarios under Option 2.

This projection represents a total cumulative physician resource supply "gap" of 1,033 physician FTEs for the province during the next five years.

The supply for most individual specialty areas is projected to fall short of the anticipated need if the situation remains status quo.

In addition to Option 1: Status Quo (no changes), the PRPC discussed three other options:

Option 2: Introduce changes to the supply/training of physician resources (e.g. changes to medical school enrolment levels, immigration policy for physicians, number of training positions available to

international medical graduates, etc).

Option 3: Introduce changes to existing service delivery models (e.g.

changing scope of practice for advance practice nurses, surgical first assist nurses, midwives, etc.) to allow for the expansion of shared care models and multidisciplinary team practices.

Option 4: Introduce changes to both supply/training and service delivery models.

The information necessary to test the effects of changes in service delivery, identified in Option 3 and 4, is not available. The Alberta Physician Resource Projection Model has

There were several positive scenarios examined that involved changing the supply-side variables. Focusing on several of these variables such as increasing retention rates of Alberta medical graduates, decreasing the number of physicians who leave the province and increasing the number of physicians who return would enable the province to meet the identified need for physician FTEs.

Strategies to deal with projected gaps in physician supply will vary for different specialty groups. Some specialties have very low rates of retention of new Alberta post-M.D. graduates, suggesting that retention policies should be looked at for these areas. Other specialties may traditionally have high retention rates and increased residency positions in these areas could potentially benefit Alberta if the rates remain high.

This phase of the Committee's work is intended to result in consensus on the number of physicians currently practicing and the number required in the future. This step is key in getting to the next phase where decisions will be made regarding the mix and distribution of physician resources to better meet the needs of the population.

The PRPC has reached consensus on the following recommendations:

- 1. The Alberta Physician Resource Planning (PRP) Database should be updated annually as part of health authority business planning. The database will be available as a resource for stakeholders and to assist Alberta Health and Wellness Business Plan objectives, such as the development of a health workforce plan and implementation of a new agreement with the AMA.
- The Alberta Physician Resource Projection Model should be enhanced and refined by Alberta Health and Wellness in consultation with physician resource planning stakeholders. This model will be an important resource for Alberta Health and Wellness, the AMA, health authorities and others.
- In the next phase of its work, the PRPC should refine its projections and develop a framework to guide decisions regarding the specialty mix of physicians that should be recruited and trained.
- The PRPC should establish a strategic committee to further develop and analyze
  policy options regarding changes to both supply and service delivery models, to
  address physician resource challenges.
- The proposed Physician Resource Strategies Committee should develop a strategy to facilitate interaction among health authorities, and between health authorities and AMA sections in regard to physician resource planning initiatives.
- 6. Post-graduate medical education training positions should be incrementally increased based on findings in the PRPC report. Additional seat allocations and determination of the mix of skill areas to address needs identified by the PRPC should be reviewed and implemented by the Post-graduate Medical Education Working (PGME) Working Group. Subsequent adjustments to undergraduate medical education positions need to be discussed with Alberta Learning and the universities.
- Efforts to enhance medical school training should continue, such as the proposal underway by the Rural Physician Action Plan Coordinating Committee (RPAPCC) for a separate rural medical education training system.
- Health authorities, AMA sections and Alberta Health and Wellness should collaborate to explore alternate delivery systems, enhance recruitment strategies and implement shared care models.
- The PRPC should continue its term (September 30, 2001), with authorization to
  focus its mandate towards monitoring progress on recommendations contained in
  this report. The PRPC should also be charged with regular progress reporting to the
  Minister of Health and Wellness, and the AMA.

The development of a needs-based assessment of physician resource requirements is a major challenge. This report demonstrates significant progress towards understanding Alberta's current physician resources and future needs. The Committee's work to-date provides the infrastructure and sets a direction to enable key stakeholders to move forward with decisions that will result in appropriate training and recruitment of physicians, and alteration of service delivery models for effective care for the population.

## 1.0 INTRODUCTION

In September 1998 the Physician Resource Planning Committee (PRPC) was established pursuant to Article 14 of the Alberta Health and Wellness/Alberta Medical Association (AMA) Agreement. The PRPC's mandate is to provide advice on issues related to physician resource planning, and to develop and maintain a comprehensive Physician Resource Plan for Alberta.

The PRPC submitted an Interim Report on December 30, 1998 that included the proposed approach to developing a Physician Resource Plan, and challenges and next steps critical to the success of an ongoing physician resource planning process for Alberta. The Minister of Alberta Health and Wellness and the AMA accepted the Interim Report.

In February of 1999, representatives of all health authorities and AMA specialty sections were provided with several packages of material to assist them in determining needs-based physician requirements, which included:

- Information on the process, methodology and format for reporting physician requirements
- The Physician Resource Planning Template
- Physician services utilization data, based on Alberta fee-for-service data
- Population projections for Alberta and health regions to the year 2016
- Data on physician head counts, full-time equivalents (FTEs) and demographic data for actively practicing physicians, from the College of Physicians and Surgeons' Alberta Physician Resource Database (APRD)

During the months of June to December 1999, the PRPC continued to collect and validate physician resource data. This information has been compiled into a database for use in ongoing physician resource planning activities. It is anticipated that these planning activities will become an integral component of health authority business planning.

The purpose of this report is to set a direction that will guide Alberta toward having the right number of physicians, with the right skills (including clinical, research, teaching, and administrative) in the right places to serve the needs of Albertans.

## 2.0 PROJECT GOALS

This initiative reflects the importance of physician resource planning in meeting the current needs of the health system and affecting fundamental change in how physicians meet the needs of tomorrow's society.

The process and outcomes from work of the PRPC are expected to assist the province with three main areas of enquiry:

- Developing an understanding of the current number of physicians actively practicing and what they do.
- Developing an understanding of the number of physicians needed now and in the future.
- Recommending strategies to attain the number and types of physicians required, in the practice settings where physicians are needed.

Four additional outcomes are expected of the PRPC:

- Developing a process to support ongoing physician resource planning.
- Continuing development of tools to assist stakeholders with ongoing information collection using a systematic, needs-based approach.
- Promoting collaboration and effective interface between health authorities, medical educational and clinical organizations.
- Developing a framework to assist with decision making on physician recruitment, retention and training priorities.

This report provides the results of the PRPC's work in these four important areas:

- Collaboration highlights of collaboration within and across health authorities and sections.
- Demonstrating the Case the methodology used to collect information for the PRPC database, the key findings and analysis of supply and demand factors.
- Options using a projection model, identifying outcomes of the in-flow and out-flow of physician resources.
- Challenges important factors such as data collection, care models, medical schools and health system support.

## 3.0 COLLABORATION

One of the PRPC's goals was to encourage collaboration among health authorities, AMA specialty sections, physicians and other stakeholders affected by physician resource planning discussions. The PRPC has laid groundwork for this collaboration to occur.

Ultimately, physician resource planning should be part of annual workforce planning that is undertaken by the health system. The overall planning initiative is currently coordinated by the Provincial Health Workforce Steering Committee. A key objective of the Steering Committee is the development of an annual provincial health workforce planning process, and an accountability framework that links to the business-planning framework. This process will identify the roles and responsibilities of health workforce stakeholders, as well as annual service-sector issues and priorities.

The 1998 Interim Report emphasized that physician resource planning must be undertaken in the context of medical service delivery design, which is the responsibility of regional health authorities and Provincial Health Boards. There was an expectation that health authorities would work with Regional Medical Staffs and AMA sections to identify requirements. Validation of data submitted by health authorities indicates collaboration occurred in different degrees across regions. Some good examples of collaboration include:

- The Alberta Cancer Board (ACB) obtained and shared information with a
  variety of stakeholders in preparing their report to the PRPC. There were
  joint sessions with Tumor Groups; forums with physicians at the Cross
  Cancer Institute in Edmonton and the Tom Baker Cancer Centre in Calgary
  and meetings with the Calgary Regional Health Authority and Capital Health
  Authority to identify individual overlapping staff members.
- The Calgary Regional Health Authority conducted a collaborative planning process with its 13 departments and 80 divisions. A workforce plan was prepared for each of the 80 divisions.
- The Capital Health Authority (CHA) provided an opportunity for the Northern Regional Medical Directors to meet with the PRPC project team to discuss the status of their physician resource planning submissions, and more specifically to encourage future discussions on sharing medical specialty resources. The number and type of specialty FTEs identified in the submissions will assist the CHA to focus their recruiting efforts.

Mental health service delivery in Alberta has a history of collaborative interdisciplinary practice. This approach to the delivery of mental health services was reflected in the membership of the Psychiatry Working Group, which included representation from psychiatry and family practice, the Alberta Mental Health Board, as well as community health services such as psychology, mental health therapy and nursing. The work undertaken by this Group was a good example of exploring interdisciplinary models of health service delivery involving greater integration of services.

# 4.0 DEMONSTRATING THE CASE

#### 4.1 METHODOLOGY

#### **Data Collection**

As described in the Goals section of this report, the PRPC set out to identify the number of physician FTEs providing service in Alberta, and to determine the current and future resource needs to meet the province's demand for physician services.

In February of 1999, representatives of all health authorities and AMA specialty sections were provided with several packages of material to assist in determining needs-based physician resource requirements. Alberta's College of Physicians and Surgeons provided physician workload information from the APRD as one source of information to assist health authorities in completing their PRPC forms.

The Physician Resource Planning Template was one of the key documents to aid data collection. This template developed by the PRPC covers three areas:

- Physician Needs Assessment identifying and quantifying factors
  which are believed to describe, determine, or influence the population's
  need for physician resources in a given specialty.
- Current Physician Resources describing the current physician supply for a given specialty, including number of FTEs, distribution, demographics and workload.
- Delivery of Medical Services within Regions identifying and quantifying factors that will influence the ability to deliver physician services within regions of the province.

To date, information identifying physician resource needs and issues from the perspective of AMA sections has been received from 12 of the 32 sections. This information has been mainly narrative in nature ranging from brief commentary to in-depth analysis. The variation in format and content has made it difficult to compare or incorporate section information with information received from health authorities. A summary of information from AMA section responses is included in Appendix II. This information was not entered into the Physician Resource Planning Database.

The value of information from the physician perspective is clearly recognized, and the PRPC recommends that next steps in the planning process include an opportunity for section review of PRPC information, and solicitation of additional information from all sections.

#### **Data Validation**

During the months of June to December 1999, the PRPC continued to work with stakeholders to complete forms for each health authority. In preparing their submissions, health authorities were asked to identify current physician resource levels (in FTEs) and determine the physician resources appropriately required for meeting health service needs. Health authorities considered, to the extent possible, the impact of factors such as current and projected future physician workloads, growth and aging of populations, technology, physician practice preferences, reasonable service access and local service delivery opportunities.

The PRPC project team held validation sessions with medical leadership and/or administrative staff from each of the province's health authorities. During validation discussions, each health authority's PRPC submission was reviewed with reference to the APRD and Alberta Health and Wellness physician claims information. The claims information provided a second source of clinical care FTE information, based on an FTE proxy. An explanation of the methodology used to translate Claims Data to FTEs is provided in Appendix III.

These line-by-line validation reviews provided an opportunity for health authority representatives to compare their submissions against information from other sources, and subsequently revise submissions to enhance validity. The discussions also allowed Alberta Health and Wellness, and PRPC representatives to better understand health authority plans, operations and needs. Data was then compiled into a database (see Section 4.2) to support analysis by the PRPC.

# 4.2 THE ALBERTA PHYSICIAN RESOURCE PLANNING (PRP) DATABASE

As described in the methodology section, health authority data collected during the last half of 1999 has been used to create an Alberta Physician Resource Planning Database. Detailed information is available from the database including:

- Current physician FTEs in 1999-2000
- Projected future physician FTEs (2004-2005)
- Immediate additional physician FTE need (1999-2000)
- Total additional FTEs needed by 2005
- Where provided, some brief supporting comments about health authorities' future planned changes impacting physician resources and the rationale for planned adjustments.

Information is available for each specific specialty/special interest area of general/family practice and specialist physician practice, for each of the province's health authorities. Data for these physician groups is further sub-divided into time (in FTEs) devoted to major physician areas of activity: clinical, administrative, research teaching and "other" (e.g. practice management) activities. Detailed examples of the information contained in the database are available in Appendix IV.

#### **What Physicians Do**

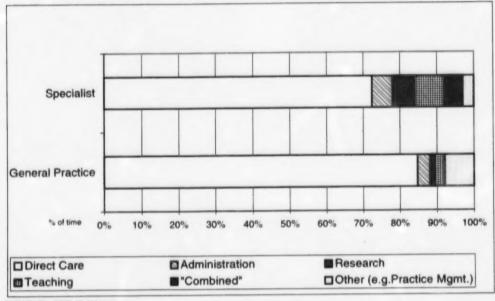
The PRPC collected information on the following physician activities shown in Figure 4.1.1:

- Direct care: Provision of medical services involving direct patient care, services provided while on-call, charting, phone calls concerning patient care, meeting with family members and acting as a preceptor within a clinical setting.
- Administration: Formal administrative responsibilities such as those performed by Medical Officers of Health, chiefs of staff, department heads and management of university programs.
- Research: Research activities including management of research publications.
- Teaching: Formal academic responsibilities such as lectures and rounds, and instruction to students and residents requiring educational preparation, performance assessment and reporting.
- "Combined": An aggregate of the above four activities that was used when a specific breakdown was not available.
- Other: Administrative or management activities, other than formal administrative positions, performed by physicians (e.g. office, practice management).

Figure 4.1.1

Percentage of Alberta Physician Time Spent in Direct Care and
Other Practice Activities

(General Practitioner and Specialist FTEs)



SOURCE: PRP Database

Based on the 1999 PRPC findings, it is clear physicians spend most of their time involved in direct care, with the average general practitioner spending approximately 80% of work time delivering direct care, while specialists average approximately 72%. Other findings include:

- Typically specialists spend a greater proportion of time involved in research activities (approximately 6% for specialists versus 1.3% for general practitioners).
- Specialists also typically spend a greater proportion of time teaching (8% for specialists versus approximately 2.5% for general practitioners).
- General practitioners tend to spend more time managing their practice (8% for general practitioners versus approximately 3% for specialists).

## Use of Full-time Equivalents (FTEs) Measure

All physician workload information in the database is recorded in FTEs rather than "head counts". The PRPC opted to collect physician FTE information after identifying shortcomings with use of simple head count methodologies. The PRPC determined that FTEs better portray individual

physician workloads and, therefore improve the quality of data collected. As well, the use of FTEs contributed to the PRPC's goal of understanding what physicians do.

The FTE definition used by the PRPC for data collection is the same as the definition used by the APRD Working Group:

#### 1.0 Physician FTE = 50 hour/week x 48 weeks/year = 2,400 hours/year

The APRD Working Group adopted its definition in 1995, based on survey information gathered from practicing Alberta physicians, regarding workload and average number of hours worked per week by physicians. Although most FTE definitions use a standard of between 35 and 40 hours per week, the College of Physicians and Surgeons of Alberta (CPSA) found Alberta physicians work an average of 50 hours per week.

The use of this definition for physician FTEs does not suggest a standard or expectation for physician workload, but instead reflects average self-reported hours.

#### 4.3 DEMAND FOR PHYSICIAN SERVICES

The demand for physician services has been quantified through the PRPC's collection of self-reported needs data from health authorities. The terms "need" and "demand" are used interchangeably throughout the report since both terms represent the amount of service health authorities and the public desire from their physicians.

The tables below present provincial and regional level physician resource information, from the PRP Database:

Table 4.3.1.

Alberta Physician FTEs (Current and Future) and Additional Needs

	All Phy	sicians	GI	Ps	Specialists	
Current Physician FTEs (1999-2000):	4,579.4		2,360.7		2,218.7	
Immediate Additional Needs (1999-2000):	332.4	(+7.2%)	144.7	(+6.1%)	187.8	(+8.5%)
Future Additional Needs (2000-2001 to 2004-2005):	987.1	(+21.7%)	465.7	(+19.7%)	531.3	(+23.9%)
Total Additional FTE Needs (1999-2000 to 2004-2005):	1,329.5	(+29.0%)	610.4	(+25.8%)	719.1	(+32.4%)
Future Physician FTEs (2004-2005):	5,908.9		2,971.1		2,937.8	

Values are rounded to one decimal place.

SOURCE: PRP Database

#### PRPC provincial findings include:

- Current Physician Resources: 1999-2000 provincial physician workload (from direct patient care, administration, teaching, research and "other" practice-related activities) equating to 4,579.4 physician FTEs. PRPC data indicates approximately 51.5% of current physician FTEs are general practitioners.
- Immediate Additional Needs: an existing immediate need for approximately 333 additional physician FTEs (145 General Practice and 188 Specialist FTEs) across the province during 1999-2000. This change represents an approximate 7.3% increase to the current provincial physician workforce. This 7.3% increase does not take into consideration any new physicians registered in Alberta since data was collected in 1999.
- Future Additional Needs: a total service need for 1,329 physician additional FTEs (610 General Practice and 719 Specialist FTEs) during the next five years, to accommodate factors such as population growth and changes to medical practice, and assuming a "status quo" health care system. If obtained, these additional physician FTEs would result in an approximate 29% increase to physician resources during the period 1999-2000 to 2004-2005. On a compounded basis, this represents an approximate 5.1% annual increase to physician resources in Alberta.

The PRPC also collected general practice and specialist information for each health authority. A high-level summary of the information appears in Table 4.3.2:

Table 4.3.2
Alberta's Physician Resources by Health Authority
PRPC Current and Future FTEs (1999-2000 to 2004-2005)

Health Authority	Curren	t FTEs	Total F1 (1999-		Future FTEs			
	GP	Specialist	GP	Specialist	GP	Specialist		
1	128.0	84.7	17.0	37.9	144.9	122.6		
2	67.0	55.5	10.1	9.1	77.1	64.5		
3	61.3	13.7	17.2	13.4	78.5	27.1		
4	703.3	955.8	313.0	184.4	1,016.3	1,140.2		
5	38.1	5.0	1.2	3.1	39.2	8.1		
6	154.0	76.2	21.0	20.5	175.0	96.7		
7	85.7	12.2	12.0	10.4	97.7	22.5		
8	70.1	5.8	4.0	1.6	74.1	7.4		
9	42.1	8.9	4.2	8.0	46.3	16.9		
10	719.5	816.4	165.2	322.7	884.7	1,139.2		
11	43.1	6.9	8.0	11.8	51.1	18.7		
12	88.3	16.6	7.2	2.9	95.5	19.5		
13	70.1	28.9	9.4	13.9	79.5	42.8		
14	19.5	1.3	2.0	0.0	21.5	1.4		
15	26.6	0.8	3.4	-0.1	30.1	0.8		
16	22.3	15.6	5.7	5.6	28.0	21.2		
17	17.2	0.7	3.7	0.9	20.9	1.5		
ACB	0.0	73.7	0.0	46.6	0.0	120.4		
AMHB	4.5	40.1	6.0	26.6	10.5	66.7		
	2,360.7	2,218.7	610.3	719.1	2,971.0	2,937.8		
All FTEs: 4,579.4			1,3	29.5	5,9	5,908.9		

Values are rounded to one decimal place. SOURCE: PRP Database

This regional data can be further analyzed to provide some insight into the distribution of general practice/family physicians and specialist physicians in the province:

Table 4.3.3
General Practice Physicians PRPC Data

Location	Current	FTEs	Total FT (1999-		Future FTE (2004)		
Regions 4 and 10	1,422.8	(60.3%)	478.2	(78.4%)	1,901.0	(64.0%)	
Other Regions	933.4	(39.5%)	126.2	(20.6%)	1,059.5	(35.7%)	
Prov. Boards	4.5	(0.2%)	5.9	(1.0%)	10.5	(0.3%)	
Total:	2,360.7	(100%)	610.3	(100%)	2,971.0	(100%)	
		-	% cha	nge from C	urrent FTEs	+25.9%	

Provincial Boards: includes the Alberta Cancer Board and the Alberta Mental Health Board Values are rounded to one decimal place.

SOURCE: PRP Database

General Practice Physicians: The PRPC found a total of 2,360.7 general practice FTEs currently providing medical services in Alberta. Approximately 39.5% of general practice physicians who work in health authorities do so outside of the province's two main referral regions, Region 10 - the Capital Health Authority (CHA) and Region 4 - the Calgary Regional Health Authority (CRHA).

Table 4.3.4
Specialist Physicians PRPC Data

Location	Current	FTEs	Total FT (1999-	Contract Con	Future FTE (2004)		
Regions 4 and 10 Other Regions Prov. Boards	1,772.2 332.7 113.8	(80.0%) (14.9%) (5.1%)	507.2 138.7 73.2	(70.5%) (19.3%) (10.2%)	2,279.4 471.4 187.1	(77.6%) (16.0%) (6.4%)	
Total:	2,218.7	(100%)	719.1	(100%)	2,937.8	(100%)	
	nge from C	urrent FTEs	: +32.4				

Provincial Boards: includes the Alberta Cancer Board and the Alberta Mental Health Board

Values are rounded to one decimal place.

SOURCE: PRP Database

 Specialist Physicians: PRPC data reports a total of 2,218.7 specialist physician FTEs within Alberta. Approximately 85% of Alberta's specialist services are provided within the Capital or Calgary Health Regions.

The PRPC findings reflect the province's physician resource requirements to meet existing and projected increases in demand. However, these needs assume few changes in the existing health system.

The PRPC has developed an Alberta Physician Resource Projection Model to address physician resource supply questions. The physician service level findings have been compared with physician supply and attrition trend information to project surpluses and deficits in the future physician stock. The identification of these surpluses and deficits will help determine Alberta's ability to meet needs for the various physician skills/types, and will help to establish priorities for immediate and longer-term action.

Immediate need information from the PRPC database appears in Appendix VI. The information has not been used in the projection model process since the need for these FTEs is immediate, and is not affected by future supply. Some of the immediate need priorities in specialist groups, from PRPC data, and determined by absolute magnitude of need and percent of current FTEs, include pediatrics, diagnostic radiology, neurosurgery, orthopedic surgery, obstetrics/gynecology, psychiatry, immunology, geriatric medicine and emergency medicine.

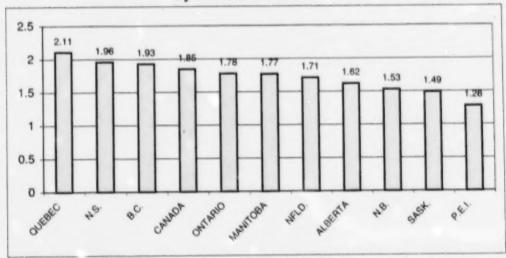
#### 4.4 MEASURING PHYSICIAN SUPPLY

#### Alberta Physician Headcount Data

As discussed in section 4.2, the PRPC considered the two primary methods employed for counting numbers of practicing physicians, head counts and full-time equivalents (FTEs), and opted to use the FTE measure. Physician head count numbers are relatively simple to produce. However, they ignore important factors, such as physician-to-physician variation in workload and personal characteristics such as age and gender.

In spite of their shortcomings, head counts are frequently employed in physician resource planning exercises, and are often used to calculate physician-to-population ratios. The PRPC found these ratios to be of limited usefulness as they ignore basic issues such as geographic distribution, and physician skill/certification. Head count and physician-to-population ratio information for Alberta and Canada is presented in the following figure for the interest of readers.

Figure 4.4.1 Number of Physicians per 1,000 Population By Province - 1998

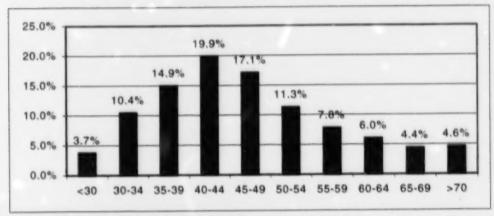


Source: CIHI, Supply, Distribution and Migration of Canadian Physicians, 1998

Alberta's physician FTE by age cohort information supplied by the College of Physician and Surgeons of Alberta is presented in Chart 4.4.2. This chart indicates that approximately 91% of actively practicing Alberta physicians are less than 65 years of age, with the greatest proportion of physicians falling within the 40-44 cohort.

Figure 4.4.2 is a snapshot that provides Alberta's physician age profile. Observing the trends over time will be useful in predicting the future supply of physicians in the province.

Figure 4.4.2 Alberta Physician Profile (1998) By Five Year Age Cohort



SOURCE: College of Physicians and Surgeons of Alberta

#### Alberta Physician Workload (FTE) Data

Historical physician FTE information provided by a number of organizations aided the PRPC. In other cases (e.g. Alberta Health Care Insurance Claims Data), the PRPC translated data into FTEs for use in the project. Both sources of data provided valuable information for stakeholders and the committee to use in carrying out their work.

Table 4.4.3 provides clinical care FTE information for Alberta physicians based on Alberta Health Care Insurance Claims Data. Due to the nature of the data, information about non-clinical activities (e.g. administrative activities) is not included in the table.

Table 4.4.3

Number of Full-Time Equivalent (FTE) Physicians (excluding Diagnostic Imaging and Laboratory Medicine) in Alberta, based on Fee-for-Service

Specialty	1994-95	1995-96	1996-97	1997-98	1998-99	Avg. Annual % Change	
Anesthesia	166.0	163.8	170.5	177.7	183.9	2.6	
Cardiovascular & Thoracic Surgery	13.3	12.9	15.1	16.0	15.8	4.4	
Dermatology	30.9	30.5	32.0	32.2	36.0	3.9	
Emergency Med.	36.7	37.2	37.1	36.9	41.0		
General Surgery	104.1	100.6	101.7	104.5	109.5	1.3	
Internal Medicine	280.6	283.2	295.0	311.2	333.1	4.4	
Neurology	44.7	45.8	45.6	45.9	49.0		
Neurosurgery	15.3	14.6	14.5	15.0	16.8	2.4	
Obstetrics/Gynecology	110.3	108.1	106.9	109.6	110.1	-0.1	
Ophthalmology	75.0	76.0	79.6	82.1	83.4		
Orthopedic Surgery	73.0	75.5	75.6	77.0	79.4	2.1	
Otolaryngology	28.7	27.5	27.7	29.1	28.6		
Pediatrics	164.8	166.5	176.8	185.8	195.9	4.4	
Physical Medicine and Rehabilitation	21.2	22.1	22.4	22.6	21.3		
Plastic Surgery	29.7	31.1	33.2	34.1	34.4		
Psychiatry	203.5	206.8	217.8	232.5	241.6		
Urology	29.2	28.9	28.8	28.8	31.1		
TOTAL SPECIALISTS	1,464.0	1,469.8	1,522.3	1,586.9	1,660.7		
General Practice	2,051.2	2,002.3	2,018.5	2,064.3	2,159.8	1.3	
TOTAL PHYSICIANS	3,515.2	3,472.1	3,540.8	3,651.2	3,820.6	2.1	
ALTA. POPULATION	2,716,073	2,741,052	2,786,408	2,847,563	2,913,132	1.8	

Sources: AHCIP Claims data 1994-1995 to 1998-1999 Alberta Health Population Registry

#### Notes

1) Data compiled on a date of service basis

2) A physician that submits claims using more than one specialty code is classified to the specialty with the highest

3) Laboratory physicians are primarily paid on a non-fee-for-service basis so are not included in the totals. Radiologists are not included because of group billing.

4) FTEs are calculated using Health Canada methodology - payments have been adjusted for fee schedule changes for comparability purposes

5) 40th and 60th percentiles were calculated based on physicians that submitted claims in all four quarters of 1997-1998.

6) These same benchmarks were used in the FTE computations for all other years.

Based on information from Table 4.4.3, the past trend in Alberta's average annual increase to physician resources appears to be approximately 2.1%. By comparison, the PRPC results indicate an overall province-wide need (i.e. "Immediate Need") to increase physician FTEs by 7.3% in the next 12 months. The magnitude of this increase is considerable. Later in this report, there is a discussion of the factors that currently affect Alberta's supply of physicians.

Over the future five-year period considered by the PRPC, the total compounded increase to physician resource needs projected by the PRPC, including the Immediate Needs, is approximately 5.1% annually. Over the five-year period, meeting the physician resource service needs

identified by the province's health authorities would produce an overall 29% increase to the province's total number of physicians.

## 4.5 BALANCING PROJECTED NEED WITH PROJECTED SUPPLY

### The Alberta Physician Resource Projection Model

In order to evaluate the province's ability to meet the needs identified through the PRPC process, it is necessary to consider future physician supply and the variables that cause net increases and decreases in the physician resource pool. These variables include:

- new Post-M.D. graduates
- · returns to active practice
- physicians moving abroad
- · immigration (physicians with pre-arranged employment)
- retirements
- deaths
- net inter-provincial migration
- temporary employment under Part 5 of Alberta Special Medical Register

The Alberta Physician Resource Projection Model was developed to compare projected need FTEs from PRPC data with projected supply FTEs, based on factors listed above. This model is similar to the Canadian Medical Association's Physician Resources Evaluation Template (PRET). Both the PRET and Alberta's Physician Resource Projection Model are spreadsheet-based projection templates incorporating the key parameters in estimating physician supply.

The Alberta model takes into account variations in workloads of physicians across age and gender groups. Assumptions about future supply variables are based on past rate and trend data from various sources including the Canadian Medical Association (CMA), Canadian Post-M.D. Education Registry (CAPER), and the Canadian Institute for Health Information (CIHI). Assumptions used for the various physician groups in order to operate the projection model are listed in Appendix VII. A synopsis of the model's identified "gaps" in physician resource supply and demand information appears in Table 4.5.1.

Before presenting the results of the model, some limitations of the model should be recognized and considered when interpreting results:

- Projections for certain specialty groups (e.g. neurosurgery) need to be interpreted with care since the accuracy of the projection decreases with smaller sized specialty groups.
- The best available data from previous years has been used as a basis
  to extrapolate values for the model (e.g. retention ratios, rates of
  physicians moving abroad, etc.). However, it should be recognized
  that the assumptions used in the model are volatile and can change
  from year to year.
- The projection model assumes no increases in Part 5 physicians. This
  factor makes the model a 'worst case' scenario since one would expect
  the recruitment of Part 5 physicians to continue in Alberta.
- Projection models are based primarily on fee-for-service data, not the PRPC self-reported data. The current FTE levels from the PRPC data will not correspond with the starting FTE point for the projection model, although the differences are quite small.

#### Findings from the Alberta Physician Resource Projection Model

Results of the projection model analysis indicate that there are potential shortfalls for a number of physician specialty/skill groups. The shortfalls for particular physician groups are shown in the Projected Supply Minus Need column of Table 4.5.1. Each health authority will have its own priorities to address; however, at the provincial level, a number of supply gaps appear as particularly significant.

## Other findings from Table 4.5.1:

- The results from combining PRPC service demand information with projected supply information indicate that, for all physician groupings (general practice/family physicians, medical specialists, and surgical specialists), given current supply and production trends, Alberta will not be able to achieve the five-year PRPC projections.
- If current rates for general practice/family physician resource production, retention and attrition hold during the period 1999-2000 to 2004-2005, the province can expect a net increase of 110.9 FTEs to its supply of these physicians. Given the PRPC's projected need for an additional 610 general practice/family physician FTEs in 2004-2005, a net deficit of 499.4 FTEs is projected for this group.

- If current rates for medical specialist physician production, retention and attrition hold during the period 1999-2000 to 2004-2005, the province can expect a net increase of 161.6 FTEs to its supply of these physicians. Given the PRPC's projected need for an additional 540 medical specialist physician FTEs in 2004-2005, a net deficit of 393.4 FTEs is projected for this group.
- If current rates for surgical specialist physician production, retention
  and attrition hold during the period 1999-2000 to 2004-2005, the
  province can expect a net increase of 15.4 FTEs to its supply of these
  physicians. Given the PRPC's projected need for an additional 156
  surgical specialist physician FTEs in 2004-2005, a net deficit of 140.8
  FTEs is projected for this group.
- This projection represents a total cumulative physician resource supply "gap" of 1,033 physician FTEs for the province during the next five years.
- Most individual specialty areas are projected to fall short of projected needs if the status quo scenario remains. Some specialty areas where the gap between projected needs and supply are large, in terms of absolute numbers, are cardiology, psychiatry, laboratory medicine, general surgery, obstetrics/gynecology, pediatrics and otolaryngology.
- Determination of priorities, or measuring the significance of a projected gap in a specialty area by looking only at the gap in terms of absolute numbers could produce incomplete or misleading conclusions. It is also important to compare the projected gap for the specialty area relative to the size (i.e. Current FTEs) of the specialty area. This comparison information appears in the last column of Table 4.5.1, Gap as a Proportion of Current FTEs.
- Examining the Gap as a Proportion of Current FTE numbers, otolaryngology, laboratory medicine, gastroenterology, and dermatology all have substantial projected gaps relative to the size of their specialties.
- Strategies to deal with projected gaps in physician supply will vary for different specialty groups. Some specialties have very low rates of retention of new Alberta post-M.D. graduates, which suggests that retention policies should be considered. Other specialties may traditionally have high retention rates and increased residency positions in these areas could be beneficial.

Table 4.5.1

Alberta Physician Resource Projection Model

Five Year Gap Analysis for "Status Quo" (Option 1) System

(assumes no Part 5 increases)

	NEED (PRPC)	SUPPLY (PROJECTION)	PROJECTED SUPPLY MINUS NEED (GAP)	GAP AS A % OF CURRENT FTEs
GP/FPs	+610.3	+110.9	-499.4	21
MEDICAL SPECIALISTS	+555.0	+161.6	-393.4	24
- Anesthesia	+29.4	+18.6	-10.8	6
- Dermatology	+23.9	+1.9	-22.0	87
- Internal Medicine	+177.0	+28.4	-148.6	36
-Allergy & Clinical Immunology	+5.7			•
-Cardiology	+34.3	-0.8	-35.1	45
-Critical Care Medicine	+11.4		•	
-Endocrinology	+11.0	+0.3	-10.7	41
-Gastroenterology	+22.0	-1.0	-23.0	56
-Geriatric Medicine	+9.5			•
-Hematology	+3.2		•	
-Infectious Disease	+5.7	•		
-Internal Med. (General)	+23.0	+11.1	-11.9	11
-Medical Oncology	+21.0	+7.1	-13.9	50
-Nephrology	+13.7	+4.0	-9.7	39
-Respiratory Medicine	+12.4	+1.7	-10.7	33
-Rheumatology	+4.1	-1.0	-5.1	30
- Neurology	+20.4	+1.7	-18.7	4
- Pediatrics	+45.5	+15.1	-30.4	1:
- Physical Med. & Rehab.	+17.9	+6.3	-11.6	5
- Psychiatry	+63.9	+9.8	-54.1	2:
- Community Medicine	+4.0	+3.4	-0.6	
- Emergency Medicine	+27.6	+8.3	-19.3	4
- Occupational Medicine	+2.0			
- Diagnostic Radiology	+39.0	+12.4	-26.6	1
- Nuclear Medicine	+3.0	+0.7	-2.3	3
- Radiation Oncology	+9.3	+2.4	-6.9	2
- Laboratory Medicine	+65.3	+1.1	-64.2	6
SURGICAL SPECIALISTS	+156.2	+15.4	-140.8	2
- General Surgery	+35.9	+0.5	-35.4	2
- Cardiothoracic Surgery	+7.1	+5.7	-1.4	
- Neurosurgery	+4.6	+1.7	-2.9	1
- Obstetrics/Gynecology	+29.3	+1.6	-27.7	2
- Otolaryngology	+22.4	-6.3	-28.7	7
- Orthopedic Surgery	+26.5	+5.1	-21.4	2
- Ophthalmology	+14.9	-8.2	-23.1	3
- Plastic Surgery	+5.8	+3.0	-2.8	
- Urology Need (PRPC): Total Needs (1999-200)	+9.8	+10.8	+1.0	

Need (PRPC): Total Needs (1999-2000 to 2004-2005) reported by Alberta's health authorities to the PRPC via the PRPC Physician Resource Template and subsequent validation discussions (see Appendix IV).

Supply (Projection): future estimated numbers of physicians who will establish a practice in Alberta, based on outputs of the Alberta Physician Resource Projection Model.

Projected Supply Minus Need (Gap): The projected "gap" in physician resource supply/demand as of 2004-2005, based on comparing PRPC Identified Need and the Alberta Physician Resource Projection Model Projected Supply.

Gap as a % of Current FTEs: Projected supply minus need (gap) divided by the current FTE.

\* Requires further analysis
A negative number indicates a supply deficit

In summary, each broad specialty group (GP/FPs, surgical specialists, and medical specialists), shows projected needs far in excess of the 'status quo' projected supply, as well as projected population increases.

This is a clear indication that the current level of physician supply is not sufficient to meet the population needs. Changes to the supply-side variables are required in order to meet this identified need. Focusing on several of these variables is a more practical solution than focusing on only one area, such as increasing post-M.D. graduates, and is likely the most effective way to meet projected needs. The scenarios (especially scenarios C and D) shown in the next section (Options) show that it is a combination of supply-side factor changes that will enable the projected supply to meet projected needs.

## 5.0 OPTIONS

### Scenario Modeling to Address Projected Physician Resource Gaps

In addition to the gap analysis, the Alberta Physician Resource Projection Model was used to assess the impact of changes (such as the effect of increasing or shifting the number of residency positions in Alberta, or introducing new measures to retain Alberta graduates) on physician supply.

The scope of options discussed by PRPC included changes to physician production and supply, and/or changes to current care models. The PRPC's four primary options to deal with current and future physician resources are:

Option 1: Status Quo – No changes to supply/training of physician resources or to service delivery models.

Option 2: Introduce changes to the supply/training of physician resources (e.g. changes to medical school enrolment levels, immigration policy for physicians, number of training positions available to international medical graduates, etc).

Option 3: Introduce changes to existing service delivery models (e.g. changing scope of practice for advance practice nurses, surgical first assist nurses, midwives, etc.) to allow for the expansion of shared care models and multidisciplinary team practices.

Option 4: Introduce changes to both supply/training and service delivery models.

The Alberta Physician Resource Projection Model was used to project impacts under "Option 2", changes to physician resource supply and training. The PRPC did not collect information to allow for testing the effects of changes in service delivery, necessary under options 3 and 4.

A variety of "Option 2" scenarios were entered into the model. These scenarios appear as Scenarios 2A – 2D in the following tables. Results of the scenario analyses appear in Table 5.1.1 for general practice/family physicians, Table 5.1.2 for medical specialists and Table 5.1.3 for surgical specialists.

Tables 5.1.1 (a) and (b), 5.1.2 (a) and (b), and 5.1.3 (a) and (b) show many, but not all, of the variables that will influence physician supply over the next five years. It is important to note that the numbers in the tables approximate annual rates used for the model calculations, but do not produce exactly the same five-year supply projection numbers as the computer-based model calculations.

#### Table 5.1.1 (a) Annual Rates forGPs

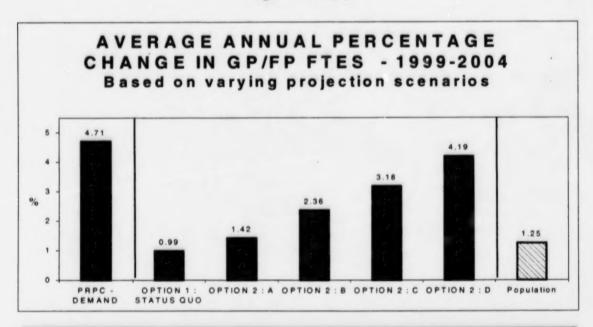
Table 5.1.1 (b) Five-year Rates

				GPs/F	ONS USED amily Phys ALL VARIA	icians				5-YEAR SUPPLY	DEMAND	SUPPLY MINUS DEMAND
Scenario	Retention Rate of Alberta Post- M.D. grads	Alberta Post-M.D.		Physicians	Physicians returning From abroad per year		Net Inter- Provincial Migration per year	Part 5 Increase	plus	Projected Increase in FTEs by 2004-05 (MODEL RESULT)	Increase in FTEs by 2004-05	Amount supply will fall short of demand based on selected assumptions
OPTION 1: STATUS QUO (72 new Alberta post-M.D. grads per year from family medicine)	66.3%	+47.7	+14.6	-40.5	+21.5	+2.5	+14.5	0	-42.9	+110.9	+610.3	-499.4
OPTION 2 : A (82 per year)	75%	+61.5	+14.6	-40.5	+21.5	+2.5	+14.5	0	-42.9	+160.7	+610.3	-449.6
OPTION 2 : B (92 per year)	75%	+69.0	+14.6	-26	+26	+2.5	+14.5	0	-43.1	+271.9	+610.3	-338.4
OPTION 2 : C (92 per year)	75%	+69.0	+14.6	-26	+26	+10	+14.5	+15	-43.9	+371.5	+610.3	-238.8
OPTION 2 : D (102 per year)	75%	+76.5	+14.6	-22	+30	+20	+14.5	+20	-44.5	+500.4	+610.3	-109.9

All Scenarios:

Assume proportion of males exiting post-M.D. training in family medicine = 44% Retinements and deaths are not the same each year - values in the table are averaged over 5 years

Figure 5.1.1 (c)



# Table 5.1.2 (a) Annual Rates for Medical Specialists

Table 5.1.2 (b) Five-year Rates

				Medi	ONS USED cal Special ALL VARIA	lists		L)			DEMAND	DEMAND
Scenario	Retention Rate of Alberta Post- M.D. grads	Alberta Post-M.D.		Physicians	Physicians returning From abroad Per year		Net Inter- Provincial Migration per year	Part 5 Increase		Projected Increase in FTEs by 2004-05 (MODEL RESULT)	PRPC desired Increase in FTEs by 2004-05	Amount supply will fall short of demand based on selected assump- tions
OPTION 1: STATUS QUO (77 new Alberta post-M.D. grads per year from medical specialties)	63%	+48.5	+8.5	-21	+16	+1.8	+15	0	-32.2	+161.6	+555	-393.4
OPTION 2 : A (87 per year)	70%	+60.9	+8.5	-21	+16	+1.8	+15	0	-32.2	+213.6	+555	-341.4
OPTION 2 : B (87 per year)	70%	+60.9	+8.5	-16	+16	+10	+15	+5	-32.9	+295.4	+555	-259.6
OPTION 2 : C (97 per year)	70%	+67.9	+8.5	-16	+16	+10	+15	+15	-33.3	+369.4	+555	-185.6
OPTION 2 : D (107 per year)	70%	+74.9	+8.5	-10	+20	+15	+15	+15	-33.7	+466.6	+555	-88.4

All Scenarios:

Assume proportion of males exiting post-M.D. training in medical specialties = 59% Retirements and deaths are not the same each year - values in the table are averaged over 5 years

Figure 5.1.2 (c)

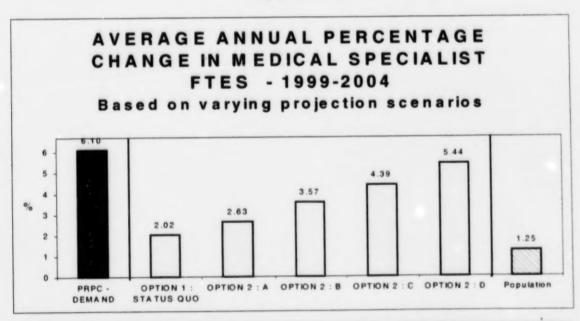


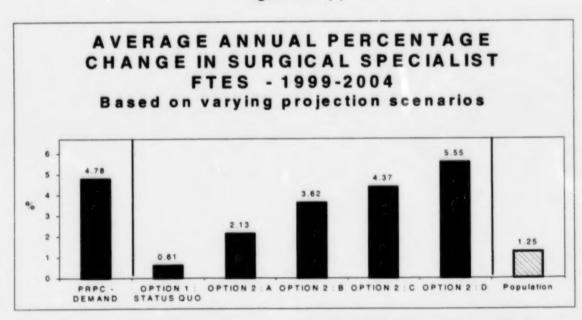
Table 5.1.3 (a) **Annual Rates for Surgical Specialists** 

Table 5.1.3 (b) **Five-year Rates** 

			TED ASS		5-YEAR SUPPLY	DEMAND						
Scenario	Retention Rate Of Alberta Post- M.D. grads			Physicians	Physicians returning From abroad per year		Net	Part 5 Increase	Retiring plus deaths per year	Projected Increase in FTEs by 2004-05 (MODEL RESULT)	PRPC desired Increase in FTEs by 2004-05	Amount supply will fal short of demand Based on selected assump- tions
OPTION 1: STATUS QUO (31.4 new Alberta post-M.D. grads per year from surgical specialties)	34.7%	+10.9	+4.7	-12.5	+7.5	+0.7	+5.5	0	-16.7	+15.4	+156.2	-140.8
OPTION 2 : A (41.4 per year)	50%	+20.7	+4.7	-12.5	+7.5	+0.7	+5.5	0	-16.7	+55.6	+156.2	-100.6
OPTION 2 : B (41.4 per year)	50%	+20.7	+4.7	-10	+10	+5	+5.5	0	-17.0	+97.3	+156.2	-58.9
OPTION 2 : C (41.4 per year)	50%	+20.7	+4.7	-10	+10	+5	+5.5	+5	-17.3	+119.3	+156.2	-36.9
OPTION 2 : D (41.4 per year)	50%	+20.7	+4.7	-7.5	+12.5	+8	+5.5	+5	-17.5	+155.3	+156.2	-0.9

Assume proportion of males exiting post-M.D. training in surgical specialties = 69% Retirements and deaths are not the same each year - values in the table are averaged over 5 years

Figure 5.1.3 (c)



### Use of the Physician Resource Planning Projection Model and Database

With ongoing refinement, the Physician Resource Planning Projection Model and Database will be useful resources for those committees and organizations whose mandates are relevant to the overall goal of ensuring Albertans have appropriate access to medical services.

For example, the Government of Alberta established Alberta's Rural Physician Action Plan (the Plan) in early 1991, as a comprehensive strategy to recruit and retain rural physicians. Since the Plan's inception, over one dozen initiatives, some medium and others long term in nature, have been implemented "on the basis of influencing physicians' decisions about moving to and remaining in a rural Alberta community". The Plan strives to address the professional and lifestyle issues that influence physician recruitment and retention.

The Rural Physician Action Plan Coordinating Committee (RPAP CC) oversees the Plan and reports to the Minister of Alberta Health and Wellness. The RPAP CC focuses its initiatives on three distinct target groups: medical students and residents, physicians currently in rural practice, and rural regional health authorities and their partner communities. The work of the PRPC will be of particular importance to the upcoming business plan objectives of RPAP CC.

The Physician Resource Planning Database and Projection Model will also be of benefit to the Post-Graduate Medical Education Working Group (PGME Working Group). The PGME Working Group was established in October 1990, with the dual mission of providing policy advice to the Minister of Alberta Health and Wellness, and to serve as a forum for the discussion of issues related to the organization and management of Post-Graduate Medical Education in the province. The PGME Working Group membership includes Alberta's post-graduate medical education associate deans, representatives of the Council of Academic Health Centres of Alberta, the Alberta Medical Association, the College of Physicians and Surgeons of Alberta, the Medical Students' Association at both Faculties, and the Professional Association of Residents of Alberta.

The PGME Working Group is responsible to the public, through the Minister of Alberta Health and Wellness, to fulfill its mandate regarding the funding and organization of post-graduate training of physicians. The Working Group is in the best position to follow through with the necessary work regarding the provincial post-graduate training aspects of a physician resource plan. As well, the PGME Working Group can facilitate linkages with the department of Learning regarding any necessary changes to undergraduate medical education as a result of the direction set by physician resource planning results.

There will be many others who can benefit from the work of the PRPC. This is an important outcome of the dedicated efforts of the Committee, the working group members and others assisting with the development of physician resource planning for the province.

## 6.0 RECOMMENDATIONS

After examining the results of comparing PRPC data with the projection model findings, the PRPC has reached consensus on the following recommendations:

- The Alberta Physician Resource Planning (PRP) Database should be updated annually as part of health authority business planning. The database will be available as a resource for stakeholders and to assist Alberta Health and Wellness Business Plan objectives, such as the development of a health workforce plan and implementation of a new agreement with the AMA.
- The Alberta Physician Resource Projection Model should be enhanced and refined by Alberta Health and Wellness in consultation with physician resource planning stakeholders. This model will be an important resource for Alberta Health and Wellness, the AMA, health authorities and others.
- In the next phase of its work, the PRPC should refine its projections and develop a framework to guide decisions regarding the specialty mix of physicians that should be recruited and trained.
- 4. The PRPC should establish a strategic committee to further develop and analyze policy options regarding changes to both supply and service delivery models, to address physician resource challenges.
- The proposed Physician Resource Strategies Committee should develop a strategy to facilitate interaction among health authorities, and between health authorities and AMA sections in regard to physician resource planning initiatives.
- 6. Post-graduate medical education training positions should be incrementally increased based on findings in the PRPC report. Additional seat allocations and determination of the mix of skill areas to address needs identified by the PRPC should be reviewed and implemented by the Post-graduate Medical Education Working (PGME) Working Group. Subsequent adjustments to undergraduate medical education positions need to be discussed with Alberta Learning and the universities.
- Efforts to enhance medical school training should continue, such as the proposal underway by the Rural Physician Action Plan Coordinating Committee (RPAPCC) for a separate rural medical education training system.
- Health authorities, AMA sections and Alberta Health and Wellness should collaborate to explore alternate delivery systems, enhance recruitment strategies and implement shared care models.

9.	The PRPC should continue its term (September 30, 2001), with authorization to focus its mandate towards monitoring progress on recommendations contained in this report. The PRPC should also be charged with regular progress reporting to the Minister of Health and Wellness, and the AMA.	
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# 7.0 CHALLENGES

The PRPC concentrated its efforts on collecting the data required to establish the groundwork for an effective physician resource planning process. There are a number of issues and challenges that need further analysis. It is anticipated that further work on these important factors will be undertaken in the months ahead.

### 7.1 DATA COLLECTION

The PRPC discovered that not all of the planning representatives were able to capture information necessary for a comprehensive needs-based plan. Some improvements will be made to the data collection methodology to ensure there is more comprehensive information in the next iteration of the physician resource plan.

An example of an effective approach to collecting information on "what physicians do" was the establishment of the General Practitioner Working Group. This Working Group focused its attention primarily on arriving at a definition of general practitioners to help clarify the continuum of services provided by this group of physicians (Appendix VIII). These services range from comprehensive primary care to more specialist services. The definition proposes three categories for defining general practitioners/family physicians based mainly on the skills utilized and services provided.

Physicians providing specialist services have historically been counted with true generalists, which is not helpful in determining needs in specific communities. General practitioners are a primary resource in using complex skill sets to provide services. There is a growing acceptance by national specialty societies and universities in support of providing training to general practitioners in advanced and special advanced skills. This training could provide resources required for the delivery of services to many communities in the province, especially communities that are geographically isolated.

From a resource perspective, the issue of functionality is important. In other words, looking at the services physicians currently provide versus the services they could provide according to their certification. The definition developed should be viewed as a framework to help determine functional categories, looking at a physician's competency in providing specific services. Recruitment of general practitioners/family physicians should be viewed in terms of skill sets. In rural Alberta, recruitment is already directed more toward skill sets than formal certification.

### 7.2 CHANGES IN CLINICAL PRACTICE

Physician practices are changing due to such factors as the effect of technology, scope of practice issues, increased number of complex cases and higher expectations of patients and the health system. Changes in medical technology and delivery of medical services can result in shifts in workload between different medical disciplines. As an example, the development of balloon angioplasty has shifted some aspects of care and treatment of heart patients from cardiac surgeons, who would previously have performed coronary artery bypass grafting, to cardiologists providing angioplasty.

Shifts in workload may be occurring amongst different medical disciplines, which could affect future physician requirements.

If regional health authorities plan to deliver services currently received by their population elsewhere, specific support by specialists and other physicians will be needed within the region.

The shifts from institutional to community-based care, and from illness-focused to wellness-oriented health services, are resulting in new delivery models and interdisciplinary practices amongst various health professions. The introduction of primary health care teams, while not widespread, is a factor to be considered in health system reform that may affect the number and type of physicians needed in the future.

# 7.3 MEDICAL SCHOOL FACTORS

The supply of physicians entering Alberta's medical system is very dependent on the number of medical graduates that decide to join Alberta's health system. Alberta needs to ensure it has a sufficient number of medical school positions, post-graduate positions and an appropriate mix between generalist/specialists.

Currently Alberta has little flexibility in the number of re-entry positions. Sufficient opportunities should be made available to practicing physicians, with adequate credentials for Alberta practice, for re-training in accordance with specialty shortages. As well, more opportunity should be available for physicians who have arrived in Alberta from outside Canada to have their skills assessed and receive the training they need to be licensed to practice.

The Rural Physician Action Plan Coordinating Committee (RPAPCC), in conjunction with the Postgraduate Medical Education Working group (PGME WG), has established the Royal College Re-entry Program. This Program was designed to assist practicing physicians in rural Alberta to

re-train in a Royal College specialty. Criteria were developed to ensure a fair selection process, and the positions come from residency positions unfilled after the second iteration of the CaRMS match.

The issue of re-entry positions is an important one for both rural and urban physicians. A predictable minimum number of positions may be an important training option for further consideration.

### 7.4 NEW MODELS OF CARE

Clinical practice issues have a significant effect on Alberta's ability to ensure Albertans have access to the medical services they need. There are numerous barriers to new models of care such as the fee schedule management and scope of practice issues.

Some of our immediate needs for physician FTEs could be addressed through the introduction of new models of care such as multi-disciplinary team practices. The PRPC supports ongoing attempts to try new, or enhance existing practice models that will lead to optimal use of our physician resources.

### **Psychiatry Working Group**

The report of the Psychiatry Working Group (the Working Group) provided the PRPC with insight on new models of care as an option for further consideration. One such shared care model utilizes general practitioners and family physicians to increase capacity and improve the level of mental health service delivery in a collaborative approach with the psychiatrist as consultant.

A shared care model requires extensive collaboration and a strong commitment to develop strategies for training family physicians to utilize advanced skills in psychiatry. In a shared care model, family physicians require good assessment skills to be aware of the signs and symptoms of mental disorders and to know when care of the patient should be turned over to a psychiatrist. Family physicians receive very little training in child psychiatry and psychogeriatrics, despite these areas being the most complex to treat. Many child psychiatric disorders are chronic; however, there is high potential for early intervention and prevention, which could impact on service delivery requirements.

Rural areas in Alberta are particularly under-serviced for psychiatry services. The main issue in rural areas is the availability of practitioners to provide services, especially within the next five years. A shared care model may be particularly effective in under-serviced rural areas. Training

for general practitioners could possibly include a rural rotation to provide increased exposure to a broader range of psychiatric disorders.

The Working Group also stressed the importance of considering the availability of community mental health services in both urban and rural areas. Many physicians, as well as the general public, are unaware of the availability of these services. The integration of community health services should be clarified and carefully considered in any shared care model developed. This includes the role of health service providers in psychology, especially in under-serviced rural areas.

### 7.5 HEALTH SYSTEM SUPPORT

This report provides a baseline needs assessment. It is assumed that once the requirement for physician services is determined on a provincial basis, it is necessary to review the infrastructure, resources and funding to support medical services.

There are many challenges that must be taken into consideration when undertaking comprehensive health workforce planning. In the case of medical service delivery there needs to be a clear understanding of the requirement for ancillary services such as diagnostic facilities, operating rooms and procedural equipment.

From a regional health system perspective the need for, and ability to support a given specialist will depend to some extent on availability of other physicians in the region. An important outcome of the PRPC process and its link with the overall health workforce planning initiative would be more effective coordination and collaboration between and within regions.

Despite the best attempts to plan for physician resources, regions continue to use the Part 5 emergency designation. Alberta Health and Wellness, in consultation with RPAPCC, the CPSA and health authorities, will lead a review of the Part 5 policy.

There are a number of factors that need further analysis to get a full understanding of Alberta's physician resource issues. The PRPC did not collect all the information necessary to examine fully these challenges. The PRPC will be directing the Physician Resource Strategies Committee to take these and other factors into consideration in developing strategies for new approaches.

# **APPENDICES**

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APPENDIX III	Methodology Used to Translate Claims Data to FTEs
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APPENDIX V (b)	PRP Database Report - Alberta Specialist Physicians
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**APPENDIX I** 

### PART 5 DESIGNATIONS

- When a Regional Health Authority (RHA) identifies the need for specific physician services, it will first attempt to recruit a physician from across Alberta or Canada who is eligible for permanent licensure on the Alberta Medical Register. If these efforts are unsuccessful, and the RHA feels the inability to recruit a permanently licensable physician will result in insufficient provision of physician services, the RHA may apply to the Health and Wellness Minister to be designated as being in an emergency situation.
- If the Minister designates a community or region as having an emergency situation in regard to specific medical services, the RHA may recruit foreign-trained physicians licensable under Part 5 of the Special Register of the College of Physicians and Surgeons of Alberta (the College).
- Part 5 licensure is limited to 30 months, during which time the physician has an
  opportunity to pass the Canadian exams required to obtain permanent licensure
  (Licentiate of the Medical Council of Canada (LMCC), Parts I and II).
- Since 1995, there have been 146 Part 5 designations granted, 40% for urban-based specialists providing regional services and 60% for mostly rural-based family physicians.

Regional Specialists	59	(40%)
Community Family Physicians	87	(60%)
Total	14	6

 According to the College, as of December 1, 1999 there were 141 physicians practicing under Part 5 of the Special Register with a further 17 registrations being processed. **APPENDIX II** 

# SUMMARY OF AMA SECTION SUBMISSIONS

AMA SECTION	CURRENT RESOURCES IDENTIFIED BY SECTION	PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	TRAINING/EDUCATION ISSUES	OPTIONS/STRATEGIES IDENTIFIED BY SECTION
Anesthesiology *		<ul> <li>Recruitment issues include approximately 160 vacancies across Canada and a large aging cohort of current practitioners. International medical school graduates have been recruited on a restricted basis; however, this issue is under review by the Royal College.</li> <li>Impacts from changes in the pattern of delivery of surgical care include increased consolidation of rural work into regional centres driven by lack of anesthesia and surgical resources, and work moving from urban, regional centres to peripheral or distance centres, and the potential need to withdraw from certain types of services.</li> </ul>	- The traditional input pool has changed dramatically. In the past it was approximately 45% re-entry, 45% direct and 15% international medical graduates; however, currently there is minimal re-entry and insufficient positions for applicants direct from medical school.	
Cardiothoracic		<ul> <li>Requirement in Edmonton for two additional cardiac surgeons and one additional thoracic surgeon over the next five years.</li> <li>Requirement in Calgary for one additional cardiac surgeon and one additional thoracic surgeon over the next five years.</li> </ul>		
Dermatology	There are 38 dermatologists registered with the College of Physicians and Surgeons FTE General Dermatology Edmonton (Accounts for one retirement in November of this year) Calgary Lethbridge Medicine Hat FTE Subspecialization - Edmonton Surgical/cosmetic 1.25	One dermatologist in Edmonton is also certified in Pathology and has a 0.5 FTE commitment to the CHA in this role.     Dermatologists in Edmonton and Calgary service outlying areas through outreach clinics and teledermatology.     Increased subspecialization has led to fewer dermatologists practicing general dermatology and continuation of this trend is dependent upon future fees for	Training programs have been severely reduced in the six-seven years since the Barer-Stoddard report.     In the last two years of the CaRMS match there were four and six reside icy positions available.     Problems obtaining J1 visa approval have made it difficult for Canadian graduates to access training in the United States, particularly in the last	<ul> <li>Train family physicians for 6-12 months to provide primary care dermatology; however, the current shortage of full-time faculty at the University of Alberta might result in this option having a negative impact on the training program.</li> <li>Add one additional residency position per year to increase to two graduates per year by 2005.</li> <li>Allocate one training position per year to residents</li> </ul>

AMA SECTION	IDENTIFIED BY SECTION	PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	TRAINING/EDUCATION ISSUES	OPTIONS/STRATEGIES IDENTIFIED BY SECTION
	Pediatric dermatology 0.5 Research 1.50 • FTE Subspecialization - Calgary Surgical/cosmetic 2.5	<ul> <li>In the next five years there will be a further loss of three to retirement in Edmonton and two in Calgary.</li> <li>The current ratio of dermatologists to population in Alberta is estimated as 1:123,000; however, The Royal College recommends 1:62,500 requiring a total of 44 FTEs, which is almost double the current 22.6 FTEs currently practicing general dermatology.</li> </ul>	<ul> <li>Effect of RVG.</li> <li>Recruitment of graduates from programs outside Alberta is unlikely because the shortage of graduates means they have ample opportunities in the area where they trained.</li> </ul>	pediatrics, which could allow the program to produce two graduates per year by 2003.
Gastro-enterology, enterology	There are 35 in Alberta;     however, the current FTEs are approximately 17.	<ul> <li>Literature suggests an ideal ratio is 2-2.1:100,000.</li> <li>Six are needed over the next five years in Edmonton.</li> <li>There is a lack of resources available to attract additional gastroenterologists, which makes it difficult to recruit.</li> <li>Lack of endoscopy services is considered critical.</li> <li>Issues that will impact on future need include increasing prevalence of disease, for example hepatitis C and the aging population.</li> <li>The liver transplant program is one of only three in Canada, which is has been fortunate to recruit local graduates; however, physicians are working very long hours to care for patients.</li> </ul>	There are 1.5-2.0 residents completing their training.	
Laboratory Medicine*	There are currently 103 FTEs	There is an estimated shortfall of 18 FTEs due to restructuring and an approximate 18% increase in workloads.     The Royal College recommends a ratio of 5.41:100,000 and the current ratio in Alberta is 3.45:100,000.     There is a large aging cohort.	Nationally there are currently 45 PGY5s: however, there are only 17 PGY1s.	

AMA SECTION	CURRENT RESOURCES	PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	TRAINING/EDUCATION ISSUES	OPTIONS/STRATEGIES IDENTIFIED BY SECTION
		<ul> <li>Despite efforts to control utilization, there has been an increase.</li> </ul>		
Obstetrics and Gynecology	The section did not find the APRD database useful and used the regional database to obtain numbers.     Generalists:     Region Number 5 (1 part-time) 2 3 4 9 (3 gynecology only) 5 1 2 (1 non-certified obstetrician) 2 (1 gynecology only) 10 15 (1 part-time) 12 2 (1 non-certified obstetrician) 12 2 (1 non-certified obstetrician) 15 (1 part-time) 16 (1 part-time) 17 (1 part-	• Immediate identified requirement for generalists:  Region Number  1	subspecialty training lacking in Alberta, which are not specific training programs lasting two years; however, they are areas requiring individuals to take three months to a year to develop expertise, which include: sexual counselling and therapy, pelvic pain, hormone replacement therapy, and adolescent/pediatric gynecology	
	endocrinology/infertility)	cialists:		

AMA SECTION	CURRENT RESOURCES IDENTIFIED BY SECTION	PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	TRAINING/EDUCATION ISSUES	OPTIONS/STRATEGIES IDENTIFIED BY SECTION
		<ul> <li>Population demographics suggest that increased numbers of</li> </ul>		
		obstetricians/gynecologists are		
		required, specifically for women of childbearing age and women who		
		are menopausal and		
		Based on an anticipated increase		
		in the population of women of		
		childbearing age and current numbers of obstetricians in the		
		province, it is estimated that the		
		addition of five obstetricians would		
		be required to treat this population.		
		<ul> <li>Looking at factors regarding</li> </ul>		
		services provided to mature		
		women, it is estimated that the		
		the required to treat this population		
		Specific issues relevant to treating		
		women of childbearing years		
		include pregnancy, birth outcomes		
		and domestic violence. Specific		
		issues relevant to treating older		
,		women include osteoporosis, heart		
		disease, cancer, and domestic violence.		
		<ul> <li>Family practitioners contribute to</li> </ul>		
		obstetrical care; however, the		
		percentage of deliveries carried		
		out by family practitioners in urban		
		regions, where most delivenes		
		Access to the following services		
		that are relevant with respect to		
		obstetrical services is also an		
		issue: diagnostic ultrasound		
		services, psychosocial support		
		services, physiotherapists with		
		special interest in the pervicinour,		
		urodynamic testing and drug and alcohol rehabilitation.		
		Increased use of medical therapies		

RATEGIES 3Y SECTION		s to determine nts wait for nd procedures fining an ting time.	Determine what is fair to patients in terms of access, including how pediatric services will be distributed.	Look at alternate service delivery models such as CORF
OPTIONS/STRATEGIES IDENTIFIED BY SECTION		Review waitlists to determine how long patients wait for consultations and procedures and work on defining an acceptable waiting time.	Determine what is fair to patients in terms of access, including how pediatric serv will be distributed.	<ul> <li>Look at alternate service delivery models such as</li> </ul>
TRAINING/EDUCATION ISSUES			A substantial number of new graduates leave the province or country.	<ul> <li>Alberta has the largest training program in Canada, which has</li> </ul>
PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	and less invasive surgical procedures or office-based techniques used to treat common gynecologic problems has resulted in decreased utilization of surgical services. This change in utilization has resulted in increased time and complicated nature of time spent in the office for practitioners.	It is estimated that 2.0 FTEs are required in Fort McMurray to meet current requirements.      A training guideline that an orthopedic surgeon should not be on call more than one night in four indicates a minimum of four orthopedic surgeons are required in a centre, or some other mechanism is required to care for patients.      Optimum ratio proposed is 1:30,000; however, the latest CMA estimates suggest changing demographics, i.e. an aging population, may increase need.      Orthopedic surgeons are travelling to centres like Hinton, Mayerthorpe, Vermilion and Whitecourt to perform some procedures (not listed) on an itinerant basis.      Planning should account for additional resources needed to support additional FTEs.	<ul> <li>In Alberta the ratio of physicians to population is 1:102,000, which is poor in comparison with the rest of the country.</li> <li>There is also a distribution problem and impending retirements will contribute to this problem.</li> </ul>	It is estimated Alberta requires a minimum of 41-49 physiatrists
CURRENT RESOURCES IDENTIFIED BY SECTION		Very sketchy detail was supplied about actual numbers:     Camrose	In 1999 two physicians were recruited in Calgary, which brings the provincial to 29. There are 19 in southern Alberta and ten in northern Alberta.	Current FTEs:     Calgary     6.58
AMA SECTION		Outpobedics Page 49	Otolaryngology and Head and Neck Surgery*	Physical Medicine and

Rehabilitation*	IDENTIFIED BY SECTION	RESOURCE IMPLICATIONS	TRAINING/EDUCATION ISSUES	IDENTIFIED BY SECTION
	Edmonton 14.75	currently and 44-53 physiatrists by 2004.	been expanded to two new residents per year for each of a	(Comprehensive Outpatient Rehabilitation Facility), which
		Current estimated additional FTE requirements:	five-year program, totaling ten residents.	was developed in the 1980s in many regions of the U.S. In this
		Edmonton	<ul> <li>Canada produces an average of</li> </ul>	model teams of rehabilitation
		Clinical 13.0 No Teaching 2.5 specific	11.2 new physiatrists per year. Provided Alberta can offer	personnel, inclusive of a physiatrist, are placed at a
		ation 3.0	competitive practice	common site in the community
*		Research 2.5 down	opportunities, two new residents	to address needs of a broad
		FTE	residency program could be	and thus are able to provide
		10	added per year to the number of	interdisciplinary rehabilitation
		Edmonton	physicians practicing in Alberta.	and case management in the
		Clinical 16.25 No	Failure to attract graduates from The University Eacuity of	patient's community.  Work with rural and emailer
		ation 3.0	Medicine into the University of	_
		3.0	Alberta residency program.	and develop an effective
		24.25	<ul> <li>Lack of a residency program in</li> </ul>	strategy to meet rehabilitation
		There is a lack of awareness of the	Calgary has likely had an effect	needs, which may involve
		role, value and cost effectiveness	on attempts to attract good	utilizing telenealth.
9 50		of physiatrists within the system	academic physiatrists to an	
		for rehabilitation medicine to set	Calgary.	
		priorities, allocate resources and		
		implement programs.		
		Significant barriers to development     Significant barriers to development		
		administrative issues, limited man-		
		power, inadequate rehabilitation		
		infrastructure, poor remuneration		
		opportunities		
		There is a need to develop an		
		effective strategy to meet re-		
		smaller urban settings in Alberta.		
		In Edmonton 40% of patients come		
		from outside the Capital Health		
		Authority. Specific rural issues		
		who are generalists, lack of		
		remuneration to set up rural		
		rehabilitation teams, and		

OPTIONS/STRATEGIES IDENTIFIED BY SECTION		Investigate the slow growth of interventional radiology considering benefits to the system when compared to conventional surgery.  Increase number of radiology graduates across Canada from 72 per year to 100 per year.
TRAINING/EDUCATION ISSUES		Currently there are 11 residents in Calgary and 18 in Edmonton and it is anticipated 18% of graduates will practice in Alberta.      There has been a gradual decline in the number of residents in radiology training programs in Canada, from 330 in 1996/97 to an expected 298 in 1998/99, as well as a decline
PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	designated rehabilitation beds in rural Alberta have not attracted physiatrists.  Issues specific to Edmonton include an inability to compete externally for either clinical or academic directors, lack of identified and funded opportunity in which to practice interdisciplinary rehabilitation in the ambulatory setting, and poor retention of physiatrists for inpatient care.  Issues specific to Calgary include the very large clinical need with limited manpower (perceived as intimidating by potential recruits), lack of breadth and depth of identified and funded opportunity in which to practice interdisciplinary rehabilitation particularly in the ambulatory setting, onerous on-call responsibilities, inability to attract a permanent external candidate as division head and retention of physiatrists.  In Calgary there is also no clearly identified "home" for rehabilitation Hospital in Edmonton, and little or no action on recommendations from numerous studies and working groups.	• Estimated FTE requirements:    Region Retirees Current 5 year   1.0
CURRENT RESOURCES		• Current FTEs:  Region 6.1 2 3 3.75 3 4 56.7 6 11.0 82.0 12 1.0 13 3.0
AMA SECTION		Radiology

OPTIONS/STRATEGIES IDENTIFIED BY SECTION		•
TRAINING/EDUCATION ISSUES	in the expected number of fellows from 76 in 1997/98 to 57 in 1998/99.  Curtailment of training are saud length of training are issues.  There is an increasing trend toward supplemental fellowship and subspecialization.	Relatively few current trainees     receive a comprehensive     education as generalists and     current medical graduates
PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	14 0 1.5 2.0 16 0 1.0 1.5 Other* 0 20.0 20.0 Total 18 210.45 254.45 *Includes Screen Test, Diagnosticare and Alberta Children's Hospital • Optimum ratio proposed is 1:13.000. The current ratio in Alberta is 1:16,000 and there is an estimated acute need for 20-40 additional radiologists. • Relative lack of access to MR and CT in urban settings is viewed as critical. • Retention issues include large workloads, inability to offer comprehensive scope of practice, inability to access ancillary services, lack of available trained technologists, non-competitive rates of remuneration relative to the U.S., and perception of "being under attack". • Issues expected to impact on the need for additional requirements include an aging population, changing age and gender demographics of radiologists, the move to interventional procedures to increase early detection of disease, advances in diagnostic procedures, increasing subspecialization, and additional requirement of radiologists to be involved in national and provincial	Current information on demographics and practice intentions of the present population of rural physicians is lacking;
CURRENT RESOURCES IDENTIFIED BY SECTION	14 1.0 16 0.0 Other 15.0 Total 183.65 Includes Screen Test, Diagnosticare and Alberta Children's Hospital	
AMA SECTION	Page 52	Rural Medicine

N ISSUES IDENTIFIED BY SECTION		rd a standard methodology for the pent by establishment of waiting lists and measurement of wait times are centage sts over standard measurement of wait times and measurement of wait times are concerns and measurement of wait times and wait times
TRAINING/EDUCATION ISSUES	typically have a more restricted skill set than graduates from 15 years ago.  • Few graduates who receive a generalist education are comfortable with the degree of responsibility and lack of back up inherent in the practice of rural medicine, and therefore there is a depleted pool of potential replacements.	<ul> <li>There is a frend toward increased subspecialization.</li> <li>The amount of time spent by Region 10 urologists in teaching activities should be considered in recruiting to this region.</li> <li>Nationally there are concerns about how the large percentage of practicing radiologists over the age of 50 could impact on supply in five to ten years. The supply in five to ten years.</li> </ul>
PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	however, a 1996 evaluation of the RPAP program indicated there was a need for approximately 60-70 new physicians in rural Alberta each year, to compensate for anticipated losses.  Factors that will affect the need for rural physicians include the imminent retirement of many physicians who were trained in the 1970s, an increasing rural population, an aging population, declining medical school enrolments, and changes in physician practice patterns.  There are strong indications there will be a recurring and severe shortage of physicians who are adequately trained and willing to work in rural Alberta.  Although an aggressive RPAP recruitment campaign addressed the shortfall, evidence from other recruitment initiatives indicates long-term retention is not encouraging.  There is a lot of uncertainty about how long new physicians recruited off-shore can be retained after they obtain unrestricted licenses in 1-3 vears.	At the September 1997 meeting of the section, the following requirements were suggested:     Region 4 3.0 Region 13 (Grande Prairie) 2.0 Region 10 4.0 A 1999 update indicates two new academic urologists were recruited in region 10, one specializing in laproscopic techniques and one in uro-dynamics and female urology.
CURRENT RESOURCES		urologists registered with the College of Physicians and Surgeons  October 1998 FTES  Region  2.2  1 2.2  2 4 13.1
AMA SECTION		Urology

AMA SECTION	CURRENT RESOURCES IDENTIFIED BY SECTION	SOURCES Y SECTION	PHYSICIAN SUPPLY ISSUES/ RESOURCE IMPLICATIONS	TRAINING/EDUCATION ISSUES	OPTIONS/STRATEGIES IDENTIFIED BY SECTION
	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0.2 15.3 0.1 35.7	practicing in region 13, and there has been a recent gain and loss of one urologist in region 4.  The Royal College recommends a ratio of 1:51,950. The ratio for Alberta was estimated as 1:82,700 and Alberta has the highest urologist to population ratio in Canada.  Urology generally services an older segment of the population and an aging population is expected to impact on the need for urologists.  The issue of pediatric urology needs to be addressed, i.e. should this requirement be over and above the general urologist	Alberta to train additional residents should be investigated.	
Page 54			requirement. It is estimated that one pediatric urologist is required in Edmonton and Calgary.  • Estimates for wait times to see a urologist range from 8.6 to 10.0 weeks and wait times for procedures and tests are also long.  • Lack of operating room time has been identified as a factor restricting recruitment of urologists to Alberta.  • Additional resources required when urologists are recruited need to be recognized.		

\* The issues identified by these sections come from the July 20, 1999 meeting with planning representatives.

**APPENDIX III** 

# FTE CALCULATION METHODOLOGY

This methodology is perhaps better known as the *Health Canada FTE Methodology*. The interest in this calculation arises because Alberta Health claims information is being used in PRPC validation discussions.

The proxy is based on aggregate annual payments to Alberta physicians. As such, only fee-for-service billings will be considered in the calculation. Additionally, the proxy is calculated for specific physician groups (i.e. Family Physicians, Obstetricians, Internal Medicine, etc.), not for all physicians across the province.

All payments to physicians within each group (e.g. Family Physicians), during a one year period, are rank ordered, smallest to largest. Only physicians that receive payments in each of the four quarters of the fiscal year are included in the determination of the 40<sup>th</sup> and 60<sup>th</sup> percentiles. The 40<sup>th</sup> and 60<sup>th</sup> percentiles are computed as follows:

(# of physicians within the group) x  $(0.4) = 40^{th}$  percentile physician (# of physicians within the group) x  $(0.6) = 60^{th}$  percentile physician

FTE assignment is made following the following procedure:

- Any ranked physician ≥ 40<sup>th</sup> percentile, and ≤ 60<sup>th</sup> percentile is assigned a value of 1.0 FTE.
- Any ranked physician (i.e. "physician X") < 40<sup>th</sup> percentile is assigned an FTE equal to:

(\$ value of payment to physician X)
(\$ value of payment to 40<sup>th</sup> percentile physician)

- Any ranked physician (i.e. physician Y)> 60<sup>th</sup> percentile is assigned an FTE equal to:
  - 1 + (Log of \$ value of payment to physician Y) / (\$ value of 60<sup>th</sup> percentile)

This creates some compression in the range above the 60<sup>th</sup> percentile, but avoids assignment of extreme values (e.g. 4.0 FTE) to very high earning physicians.

We acknowledge that the FTE proxy isn't perfect, but hope that it provides some additional insight into relative volume of services provided by physicians in your region. It is also recognized that there is no proven direct link between the College of Physicians and Surgeons of Alberta's 50 hr/wk Mean Reported Hours (i.e. 1.0 FTE) and the assignment of 1.0 FTE based on Claims data. Further, comparisons of relative workload are best made among physicians within a specific physician group vs. across different physicians types.

## FTE Calculation Methodology Sample FTE Assignment

RANK	PHYSICIAN ID	PAYMENT	PERCENTILE	FTE V	ALUE
1	Physician A	\$100,000	< 40 <sup>th</sup>	0.71	FTE
2	Physician B	\$120,000	< 40 <sup>th</sup>	0.85	FTE
3	Physician C	\$130,000	< 40 <sup>th</sup>	0.93	FTE
4	Physician D	\$140,000	40 <sup>th</sup>	1.00	FTE
5	Physician E	\$145,000		1.00	FTE
6	Physician F	\$150,000	60 <sup>th</sup>	1.00	FTE
7	Physician G	\$155,000	> 60 <sup>th</sup>	1.01	FTE
8	Physician H	\$170,000	> 60 <sup>th</sup>	1.05	FTE
9	Physician I	\$170,000	> 60 <sup>th</sup>	1.05	FTE
10	Physician J	\$185,000	> 60 <sup>th</sup>	1.09	FTE

 $40^{th}$  percentile = (10 physicians x 0.4) = 4 = Physician D  $60^{th}$  percentile = (10 physicians x 0.6) = 6 = Physician F

**APPENDIX IV** 

Provincial Physician FTEs (Specialist and General Practice) by Region - Need and Per Cent Change (1999/2000 - 2004/05)

		IMMEDIATE	% OF		% OF		% OF	
	CURRENT FTES	FTE NEED	CURRENT	ADDITIONAL NEED	CURRENT	TOTAL	CURRENT	FTEs
201038	(1999/2000)	(1999/2000)	FTE	(2000/01-2004/05)	FTE	NEED	FTE	(2004/2005)
NOIDE NOIDE NO SECTION AND SEC	212.7	5.0	2.4%	49.8	23.4%	54.8	25.8%	267.5
Commode Annual Commod	122.4	5.4	4.4%	13.8		19.2	15.7%	141.6
UZ-Pailiser RRAZ	750	3.88	5.0%	26.8		30.6	40.7%	105.5
O3-Headwaters HIAG	1659 1	110.0	6.6%	387.4		497.4	30.0%	2156.5
04-Calgary HHA4	43.0	0.0	0.0%	4.3		4.3	10.0%	
05-Health Authority 5	230.2	11.1	4.8%	30.4		41.5	18.0%	271.7
06-David Inompson hhao	6 26	3.3	3.3%	19.1		22.4	22.8%	
07-East Central HHA/	759	2.0	2.6%	3.6		5.6	7.4%	81.5
08-Westview RHAB	510	7.5	14.7%	4.7		12.2	23.9%	
09-Crossroads RHA9	1535 9	1315	89.8	356.5		487.9	31.8%	2023.9
10-Capital Health Authority 10	2005	000	16.5%	11.5		19.8	39.6%	
11-Aspen RHA11	105.0	0 0	2.7%	7.2		10.1	9.6%	
12-Lakeland RHA12	0.00	0 00	8 3%	15.0	15.2%	23.3	23.5%	122.3
13-Mistahia RHA13	20.00	1.0	4.8%	1.0	4.9%	2.0	9.7%	22.9
14-Peace Health Region 14	27.5	0.0	0.0%	3.3	12.1%	3.3	12.1%	30.8
15-Keeweetinok Lakes HHA 15	37.9	8.0	21.1%	3.3		11.3	29.8%	49.2
16-Northern Lights hnA 10	17.8	2.5	14.0%	2.1		4.6	25.6%	22.4
17-Northwestern HRA	73.7	12.6		34.0	46.1%	46.6	63.3%	120.4
18-Alberta Cancer Board	44.6	9.5		23.1	51.8%	32.6	73.1%	77.2
19-Alberta Mental Health Board	45794	332.4		997.0	21.8%	1329.5	29.0%	5908.9
I OTAIL EST.								

"TOTAL NEED" = IMMEDIATE FTE NEED (1999/2000) + ADDITIONAL NEED (2000/01 - 2004/05) "ADDITIONAL NEED (2000/01-2004/05)" = (TOTAL NEED - IMMEDIATE FTE NEED (1999/2000)) "IMMEDIATE FTE NEED (1999/2000)" - refers to physician FTEs required during 1999/2000 Current FTEs (1999/2000) + TOTAL NEED = FTEs (2004/05) All numbers have been rounded to one decimal point.

Provincial Physician FTEs (GENERAL PRACTICE ONLY) by Region - Need and Per Cent Change (1999/2000 - 2004/05)

		IMMEDIATE	% OF		% OF		% OF	
REGION	(1999/2000)	FTE NEED (1999/2000)	CURRENT	ADDITIONAL NEED (2000/01-2004/05)	CURRENT	TOTAL	CURRENT	FTEs (2004/2005)
01-Chinook RHA1	128.0	0.0	80.0			17.0	13.2%	144.9
02-Palliser RHA2	67.0	4.0	6.0%			10.1	15.1%	17.1
03-Headwaters RHA3	61.3	3.3	5.3%			17.2	28.1%	78.5
04-Calgary RHA4	703.3	80.0	11.4%	233.0	33.1%	313.0	44.5%	1016.3
05-Health Authority 5	38.1	0.0				1.2	3.2%	39.2
06-David Thompson RHA6	154.0	5.0				21.0	13.7%	175.0
07-Fast Central RHA7	85.7	2.3				12.0	14.0%	7.76
OR-Westview RHAB	70.1	1.0				4.0	5.7%	74.1
09-Crossroads RHA9	42.1	4.5				4.2	10.0%	46.3
10-Capital Health Authority 10	719.5	22.2				165.2	23.0%	884.7
11-Aspen BHA11	43.1	3.0				8.0	18.6%	51.1
12-I skeland RHA12	88.3	2.2		5.0	5.7%	7.2	8.2%	95.5
13-Mistahia RHA13	70.1	5.0			6.3%	9.4	13.5%	79.5
14-Peace Health Region14	19.5	1.0			5.1%	2.0	10.2%	21.5
15-Keeweetinok Lakes RHA15	26.6	0.0		3.4	12.8%	3.4	12.8%	30.1
16-Northern Lights RHA16	22.3	5.0			3.1%	5.7	25.6%	28.0
17-Northwestern RHA17	17.2	2.3	13.1%	1.4	8.5%	3.7	21.6%	20.9
18-Alberta Cancer Board	0.0	0.0	0.0%		%0.0	0.0	0.0%	0.0
19-Alberta Mental Health Board	4.5	4.0	88.8%	2.0	44.3%	6.0	133.1%	10.5
Total(FTFs)	2	144.7	6.1%	465.7	19.7%	610.3	25.9%	2971.0

"TOTAL NEED" = IMMEDIATE FTE NEED (1999/2000) + ADDITIONAL NEED (2000/01 - 2004/05) "ADDITIONAL NEED (2000/01-2004/05)" = (TOTAL NEED - IMMEDIATE FTE NEED (1999/2000)) IMMEDIATE FTE NEED (1999/2000)" - refers to physician FTEs required during 1999/2000 Current FTEs (1999/2000) + TOTAL NEED = FTEs (2004/05) All numbers have been rounded to one decimal point.

Provincial Physician FTEs (SPECIALIST ONLY) by Region - Need and Per Cent Change (1999/2000 - 2004/05)

	CURRENT	IMMEDIATE FTE NEED	% OF	ADDITIONAL NEED	% OF		% OF CURRENT	FTEs
REGION	(1999/2000)	(1999/2000)	CURRENT FTE	(2000/01-2004/05)	CURRENT FTE TOTAL NEED	TOTAL NEED	FTE	(2004/2005)
Of Chinook BHA1	84.7	5.0	5.9%	32.9	38.8%	37.9	44.7%	122.6
O Pallices BHA2	55.4	1.4	2.5%	7.7	13.9%	9.1	16.4%	64.5
Z-ramses mach	13.7	0.5	3.6%	12.8	93.8%	13.4	97.4%	27.1
Co-meadwaters miles	955.8	30.0	3.1%	154.4	16.2%	184.4	19.3%	1140.2
O4-Calgary Arrival	5.0	0.0	0.0%	3.1	62.1%	3.1	62.1%	8.1
S-nearth Addition y	762	6.1	8.0%	14.4	18.9%	20.5	26.9%	96.7
Department incompanies	122	1.0	8.2%	9.4	76.8%	10.4	85.0%	22.5
O'-East Central nno.	5.0	1.0	17.4%	9.0	10.4%	1.6	27.8%	7.4
OG-Westview Physics	6	3.0	33.8%	5.0	56.3%	8.0	90.1%	16.9
OS-Crossionads Arras	8164	10		213.5	26.1%	322.7	39.5%	1139.2
10-Capital health Additions	8			6.5	94.9%	11.8	171.0%	18.7
11-Aspen HHA!	16.6	90	3.8%	2.2	13.3%	2.9	17.1%	19.5
12-Lakeland HHA IZ	28.9	3.3	11.2%	10.6	36.7%	13.9	47.9%	42.8
13-Mistania HHA I 3	13	0.0	%0.0	0.0	1.5%	0.0	1.5%	1.4
14-Peace near negron -	0.8	0.0	0.0%	-0.1	-9.6%	-0.1	-9.6%	0.8
13-Keeweelmok Lakes min	15.6	3.0	19.2%	2.6	16.7%	5.6	35.9%	21.2
10-Northern Lights And	0.7	0.3	37.9%	9.0	92.4%	6.0	130.3%	1.5
1/-Northwestern hard	737	12.6	17.1%	34.0	46.1%	46.6	63.3%	120.4
18-Alberta Cancer Board	40.1	5.5		21.1	52.7%	26.6	66.4%	66.7
Total/ETFeir	22	187.8	8.5%	531.3	23.9%	719.1	32.4%	2937.8

"TOTAL NEED" = IMMEDIATE FTE NEED (1999/2000) + ADDITIONAL NEED (2000/01 - 2004/05) "ADDITIONAL NEED (2000/01-2004/05)" = (TOTAL NEED - IMMEDIATE FTE NEED (1999/2000)) "IMMEDIATE FTE NEED (1999/2000)" - refers to physician FTEs required during 1999/2000 Current FTEs (1999/2000) + TOTAL NEED = FTEs (2004/05) All numbers have been rounded to one decimal point.

Provincial Physician FTEs (Specialist and General Practice) by Region and FTE Type (1999/00)

REGION	Total Of CURRENT FTE LEVEL	Administration Combined		Direct Care	Other	Research	Teaching
01-Chinook RHA1	212.7	5.0		198.7	9.0	0	
02-Palliser RHA2	122.4			112.0	5.5	0.3	1.8
03-Headwaters RHA3	75.0	0.8		67.1	7.1		
04-Calgary RHA4	1659.1	97.6		1222.0	119.4	6.06	139.2
05-Health Authority 5	43.0	6.0		38.3	3.9	•	
06-David Thompson RHA6	230.2			205.7	11.6	9.0	3.2
07-East Central RHA7	97.6	3 2.5		88.4	6.7		0.3
08-Westview RHAB	75.9			67.8	4.8		1.4
09-Crossroads RHA9	51.0	2.6		44.3	2.8		1.0
10-Capital Health Authority 10	1535.9	7		1242.4	59.4		80.1
11-Aspen RHA11	50.0	9.0		46.0	3.4	-	
12-Lakeland RHA12	105.0	6.1		90.1	6.8	3 0.4	1.5
13-Mistahia RHA13	0.66			89.7	9	-	
14-Peace Health Region 14	20.9	9 0.3		19.4	1.	~	
15-Keeweetinok Lakes RHA15	27.5	9.0		25.2	-	4	
16-Northern Lights RHA16	37.9			33.6	2.3	8	
17-Northwestern RHA17	17.8	3 0.5		16.3	-	_	
18-Alberta Cancer Board	73.7	1	73.7				
19-Alberta Mental Health Board	44.6	10	44.5		0.1	1	
Total(FTEs):	4579.4	1 205.5	118.2	3606.9	252.6	3 167.9	228.4
% of Total FTEs:	100.0%	4.5%	2.6%	78.8%	5.5%	3.7%	5.0%

REGION	Total Of CURRENT FTE LEVEL	Administration	tration Combined	Direct Care	Other	Research	Teaching
Regions 4 and 10	3195.0				1		
% of Total FTEs:	8.69						
"Other" Regions	1266.1	38.9	0.0	1142.5	73.7	0.0	0.0
% of Total FTEs:	27.6%						
Provincial Boards	118.3						
% of Total FTEs:	2.6%						

"FTE Need 1999 - 2004" - includes all specialist FTEs required over and above levels existing in 1999, including "Immediate Need" FTEs.

<sup>&</sup>quot;Five Year Need" - includes all specialist FTEs required over and above levels existing after all "Immediate Need" FTEs are recruited.

<sup>&</sup>quot;Combined" - reports all FTE types together where information was not available by FTE category.

<sup>&</sup>quot;Other!" - refers to all Alberta RHAs, with the exception of CRHA, CHA, ACB & AMHB.

Provincial Immediate Need for All Physician Resources (Specialist and General Practice FTEs) by Region and FTE Type (1999/00)

REGION	Total Of IMMEDIATE FTE NEED	Administration Combined Direct Care	combined		Other Research	Research Teaching
01Chinook RHA1	5.0	0		5.0		
02-Palliser RHA2	5.4	1 0.4		2.0		
03-Headwaters RHA3	3.8	3 0.2		3.6		
04-Calgary RHA4	110.0			108.0		2.0
05-Health Authority 5	0.0	0				
06-David Thompson RHA6	11.1	0.5		10.6		
07-East Central RHA7	3.0			3.3		
08-Westview RHAB	2.0	0		2.0		
09-Crossroads RHA9	7.3	0.5		7.0		
10-Capital Health Authority 10	131.5	5 5.2		107.1	6	9.8 9.5
11-Aspen RHA11	8.3	•		8.3		
12-Lakeland RHA12	2.5			2.7		0.1
13-Mistahia RHA13	8.3	3 0.3		8.0		
14-Peace Health Region14	1.0	0		1.0		
15-Keeweetinok Lakes RHA15	0.0	0				
16-Northern Lights RHA16	8.0	0		8.0		
17-Northwestern RHA17	2.5	5 0.3		2.3		
18-Alberta Cancer Board	12.6	(0	12.6			
19-Alberta Mental Health Board	9.5		9.5			
Total (FTEs):	332.4	1.3	22.1	281.7	0.0	9.8 11.
% of Total Of IMMEDIATE FTE NEED	100.0%	2.2%	6.7%	84.7% (	0.0% 2.9%	% 3.5%

REGION	Total Of IMMEDIATE FTE NEED	Administration Combined Direct Care Other Research Teaching	Combined	Direct Care	Other	Research	Teaching
Regions 4 and 10	241.5		0.0	215.1	0.0		
% of Total Of IMMEDIATE FTE NEED	72.6%						
"Other" Regions	68.8	3 2.2			0.0	0.0	0.0
% of Total Of IMMEDIATE ETF NEED	20.7%						
Provincial Roards	22.1						
S OF TOTAL OF IMMEDIATE ETF NEED	6.7%						

"FTE Need 1999 - 2004" - includes all physician FTEs required, including "Immediate Need" FTEs, over and above levels existing in 1999.

<sup>&</sup>quot;Combined" - reports all FTE types together where information was not available by FTE category.

<sup>&</sup>quot;Other" - refers to all Alberta RHAs, with the exception of CRHA, CHA, ACB & AMHB.

Total Provincial Need for All Physician Resources (Specialist and General Practice FTEs) by Region and FTE Type (1999/00 - 2004/05)

REGION/SECTION	Total Of FTE NEED 1999 - 2004		Administration Combined		Direct Care 0	Other R	Research	Teaching
01-Chinook RHA1		54.8			54.8			
02-Palliser RHA2		19.2	1.0		18.2			
03-Headwaters RHA3		30.6	1.0		29.6			
04-Calgary RHA4		497.4	3.6		468.1		-1.3	27.0
05-Health Authority 5		4.3			4.3			
06-David Thompson RHA6		41.5	1.8		38.2	1.4		0.1
07-East Central RHA7		22.4	2.0		20.1			0.3
108-Westview RHA8		5.6			5.6			
09-Crossroads RHA9		12.2	0.5		10.7			1.0
10-Capital Health Authority 10		487.9	18.0		399.9		38.3	31.7
11-Aspen RHA11		19.8	0.2		19.6			
12-I akaland RHA12		10.1	0.2		8.6	٠		0.1
13-Mistahia RHA13		23.3	1.0		22.3			
14-Peace Health Region14		2.0			2.0			
15-Keeweetinok Lakes RHA15		3.3	0.2		3.2			
16-Northern Lights RHA16		11.3			11.3			
17-Northwestern RHA17		4.6	0.3		4.3			
18-Alberta Cancer Board		46.6		46.6				
19-Alberta Mental Health Board	,	32.6		32.6				
Total (FTEs):		1329.5	29.7	79.2	1122.0	1.4	37.0	60.1
		%0.001	2.2%	80.9	84.4%	0.1%	2.8%	4.5%

REGION	% of Total Of TOTAL NEED 99-04 Administration Combined Direct Care Other	Administration	Combined	Direct Care	Other	Research Teaching	Teaching
Regions 4 and 10	985.3	21.6	0.0	868.0	0.0	37.0	58.7
W of Total Of ETE NEED 1999 - 2004	74.1%		_			2.8%	4.4%
"Other" Regione	264.9	8.1	0.0				1.5
MAN OF STE MEED 1999 - 2004	% 6 6 L				0.1%		0.1%
Descripcial Roarde	79.2	0.0	79.2			0.0	0.0
9. of Total Of ETE NEED 1999 - 2004	%0.9				%0.0	%0.0	0.0%

"FTE Need 1999 - 2004" - includes all physician FTEs required, including "Immediate Need" FTEs, over and above levels existing in 1999.

"Combined" - reports all FTE types together where information was not available by FTE category.

"Other" - refers to all Alberta RHAs, with the exception of CRHA, CHA, ACB & AMHB.

"Regions 4 and 10" - refers to CRHA & CHA Regions, but does not include ACB or AMHB.

Provincial Physician FTEs (Specialist and General Practice) by Region and FTE Type (2004/05)

REGION	Total Of FUTURE FTE LEVEL	Adminis	Administration C	Combined D	Direct Care O	Other R	Research Teaching	eaching
01-Chinook RHA1	2	267.5	2.0		253.5	9.0		
02-Pallisar BHA2	-	141.6	4.1		130.2	5.2	0.3	1.8
03-Headwaters RHA3		105.5	1.8		9.96	7.1		
04-Calgary BHA4	21	2156.5	91.2		1690.1	119.4	9.68	166.2
OS-Health Authority 5		47.3	0.9		42.6	3.9		
O.S. David Thompson RHA6	2	271.7	10.9		243.9	13.0	9.0	3.3
07-Fact Central BHA7	1	20.2	4.5		108.5	6.7		0.5
OR-Westview RHAS		81.5	1.7		73.4	4.8	0.2	1.4
Og-Crossroade RHA9		63.2	3.1		55.0	2.8	0.4	2.0
10-Capital Health Authority 10	20	2023.9	97.0		1642.3	59.4	113.4	111.8
11-Aspen RHA11		8.69	0.8		65.6	3.4		
12-Lakeland RHA12		115.0	6.3		6.66	6.8	0.4	1.6
13-Mistahia RHA13	-	22.3	4.3		112.0	6.1		
14-Peace Health Region 14		22.9	0.3		21.4	1.2		, *
15-Keeweetinok Lakes RHA15		30.8	0.8		28.4	1.7		
16-Northern Lights RHA16		49.2	2.0		44.9	2.3		
17-Northwestern RHA17		22.4	0.7		20.6	1.1		
18-Alberta Cancer Board	-	120.4		120.4				
19-Alberta Mental Health Board		77.2		77.1		0.1		
Total(FTEs):		5908.9	235.2	197.5	4728.8	254.0	204.9	288.5
Of Total FTE		100.0%	4.0%	3.3%	80.0%	4.3%	3.5%	4.9%

NO COST		Total Of CURRENT FTE LEVEL	Administration	Combined	tration Combined Direct Care Other		Research Te	Teaching
Regions 4 and 10		4180.4		0.0	3332.4	- 0	203.0	
6	% of Total FTEs:							
"Other" Regions			46.9			75.1		
	% of Total FTEs:							
Provincial Boards		197.6		197.5			0.0	0.0
	% of Total FTEs:		%0.0			%0.0		

<sup>&</sup>quot;FTE Need 1999 - 2004" - includes all specialist FTEs required over and above levels existing in 1999, including "Immediate Need" FTEs.

<sup>&</sup>quot;Five Year Need" - includes all specialist FTEs required over and above levels existing after all "Immediate Need" FTEs are recruited. "Combined" - reports all FTE types together where information was not available by FTE category.

<sup>&</sup>quot;Other" - refers to all Alberta RHAs, with the exception of CRHA, CHA, ACB & AMHB.

<sup>&</sup>quot;Regions 4 and 10" - refers to CRHA & CHA Regions, but does not include ACB or AMHB.

APPENDIX V (a)

# PRP DATABASE REPORT - ALBERTA GENERAL PRACTICE/FAMILY PHYSICIAN FTES

0.5       4.5       5.0         1.5       7.0       8.5         0.0       0.0       0.0         0.0       0.2       0.2         1.27.3       393.8       521.2       21         1.2       3.4       3.9       21         0.5       3.4       3.9       21         0.0       0.3       -0.3       -0.3         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0	0	CURRENT FTES IMMEDIATE FTE NEED (1999/2000)	TE NEED 00)	ADDITIONAL FTE NEEDS (2000/01 - 2004/05)	1999/00 - 2004/05)	FUTURE FTES
1.5       7.0       8.5       4         0.0       0.0       0.0       0.0         0.0       0.2       0.2       22.6       27.7       25         127.3       393.8       521.2       25       25       25       25       25       25       25       25       25       25       25       25       25       25       25       26       2.8       2       2       28       2       2       25       2		15.5	0.5	4.5	5.0	20.5
0.0     0.0       0.0     0.2     0.2       0.0     0.2     0.2       127.3     22.6     27.7     25       0.5     3.4     3.9     4       1.0     9.5     10.5     2       0.0     -0.3     -0.3     -0.3       0.0     2.6     2.8     2       0.0     2.5     2.5     1       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0		37.0	1.5	0.7	8.5	45.5
0.0     0.2     0.2       5.1     22.6     27.7     25       127.3     393.8     521.2     212       0.5     3.4     3.9     4       1.0     9.5     10.5     2       0.0     2.6     2.8     2       0.0     2.5     2.8     2       0.0     0.0     0.0     21       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0		0.2	0.0	0.0	0.0	0.2
5.1     22.6     27.7     25       127.3     393.8     521.2     212       0.5     3.4     3.9     4       1.0     9.5     10.5     2       0.0     2.6     2.8     2       0.0     2.6     2.8     2       0.0     0.0     0.0     21       0.0     0.0     0.0     22       1.4     0.8     2.5     2.5       0.0     0.0     0.0     0.0       4.5     9.4     13.9     6       4.5     9.3     -0.2     0.1       0.3     0.0     0.0     0       0.3     0.0     0.0     0       0.3     0.0     0.0     0		2.9	0.0	0.2	0.2	3.1
127.3     393.8     521.2     212       0.5     3.4     3.9     4       1.0     9.5     10.5     2       0.0     -0.3     -0.3     2.8     2       2.4     9.8     12.2     6       0.0     2.5     2.5     1       0.0     0.0     0.0     21       1.4     0.8     2.2     1       0.0     0.0     0.0     0.0       4.5     9.4     13.9     6       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0       0.0     0.0     0.0     0.0	22	227.5	5.1	22.6	27.7	255.2
0.5       3.4       3.9       4         1.0       9.5       10.5       2         0.0       -0.3       -0.3       -0.3         0.2       2.6       2.8       2         2.4       9.8       12.2       6         0.0       2.5       2.5       1         0.0       0.0       0.0       21         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.0       0.0       0.0       0.0         0.3       -0.2       0.0       0.0         0.0       0.0       0.0       0.0	160	1607.7	127.3	393.8	521.2	2128.9
1.0     9.5     10.5     2       0.0     -0.3     -0.3     2.8     2.8     2       2.4     9.8     12.2     6       0.0     2.5     2.5     1       0.0     0.0     0.0     2.1       1.4     0.8     2.2     1       0.0     0.0     0.0     0.0       4.5     9.4     13.9     6       0.0     0.0     0.0     0       0.3     -0.2     0.1     1       0.0     0.0     0.0     0       0.0     0.0     0.0     0	8	39.4	0.5	3.4	3.9	43.3
0.0     -0.3     -0.3       0.2     2.6     2.8     2       2.4     9.8     12.2     6       0.0     2.5     2.5     1       0.0     0.0     0.0     2.1       0.0     0.0     0.0     2.2       0.0     0.0     0.0     0.0       4.5     9.4     13.9     6       0.3     -0.2     0.1     1       0.0     0.0     0.0     0       0.0     0.0     0.0     0       0.0     0.0     0.0     0	0,	9.5	1.0	9.5	10.5	20.0
0.2     2.6     2.8     2       2.4     9.8     12.2     6       0.0     2.5     2.5     1       0.0     0.0     0.0     21       0.0     0.0     0.0     0.0       0.0     0.0     0.0     2       0.0     0.0     0.0     2       0.0     0.0     0.0     2       0.3     -0.2     0.1     1       0.0     0.0     0.0     0.0	+	6.	0.0	-0.3	-0.3	1.0
2.4     9.8     12.2     6       0.0     2.5     2.5     1       0.0     0.0     0.0     21       0.0     0.0     0.0     0.0       4.5     9.4     13.9     6       0.0     0.0     2       0.0     0.0     2       0.0     0.0     2       0.0     0.0     2       0.0     0.0     2       0.0     0.0     0.0       0.0     0.0     0.0	18.3	6	0.2	2.6	2.8	21.1
0.0     2.5     2.5       0.0     0.0     0.0       1.4     0.8     2.2       0.0     0.0     0.0       0.0     0.0     0.0       0.0     0.0     0.0       0.3     -0.2     0.1       0.0     0.0     0.0       0.0     0.0     0.0	56.0	0.	2.4	8.6	12.2	68.2
0.0     0.0     21       1.4     0.8     2.2     1       0.0     0.0     0.0     0.0       4.5     9.4     13.9     6       0.0     0.0     2       0.3     -0.2     0.1     1       0.0     0.0     0     2       0.0     0.0     2       0.0     0.0     2       0.0     0.0     0	15.2	2	0.0	2.5	2.5	17.7
1.4     0.8     2.2       0.0     0.0     0.0       0.0     0.0     0.0       0.0     0.0     2       0.0     0.0     2       0.3     -0.2     0.1       0.0     0.0     0.0	219.6	9	0.0	0.0	0.0	219.6
0.0     0.0       0.0     0.0       4.5     9.4     13.9       0.0     0.0     2       0.3     -0.2     0.1       0.0     0.0     2       0.0     0.0     2	9.8	80	1.4	8.0	2.2	12.0
0.0     0.0       4.5     9.4     13.9       0.0     0.0     2       0.3     -0.2     0.1       0.0     0.0     0.0	4	4.4	0.0	0.0	0.0	4.4
4.5     9.4     13.9     6       0.0     0.0     2       0.3     -0.2     0.1     1       0.0     0.0     0.0	vo.	5.0	0.0	0.0	0.0	5.0
0.0     0.0     2       0.3     -0.2     0.1     1       0.0     0.0     0.0     0.0	47.3	6.	4.5	9.4	13.9	61.2
0.0 0.0 0.0	21.2	2	0.0	0.0	0.0	21.2
0.0 0.0 0.0	15.3	63	0.3	-0.2	0.1	15.4
	7		0.0	0.0	0.0	7.6

GP SPECIAL SKILL - refers to clinical skills possessed by a physician in additional to normal general/family practice skills

FTE values are rounded to one decimal place

IMMEDIATE FTE NEED = Additional FTEs required in 1999,2000

ADDITIONAL FTE NEEDS = FTEs, over and above IMMEDIATE NEEDS, required during 2000/01 - 2004/05

IMMEDIATE FTE NEEDS + ADDITIONAL FTE NEEDS = TOTAL FTE NEEDS

CURRENT FTES + IMMEDIATE FTES + ADDITIONAL FTES = FUTURE FTES

APPENDIX V (b)

## PRP DATABASE REPORT - ALBERTA SPECIALIST PHYSICIAN FTES

Allertgy & Clinical Immunology         3.8         3.0         2.7         5.7         9.5           Anaesthesia         188.1         11.0         184         29.4         217.5           Cardiology         78.3         8.1         26.2         34.3         112.7           Cardiology         78.3         1.0         1.7         2.8         3.0           Child Protection         0.3         1.0         1.7         2.8         3.0           Child Protection         17.1         2.3         0.0         3.8         1.1         4.0         21.1           Community Medicine         29.1         1.0         1.0         1.0         1.4         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.1         4.0         21.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0         22.0	GP SPECIAL SKILL	CURRENT FTES	IMMEDIATE FTE NEED (1999/2000)	ADDITIONAL FTE NEEDS (2000/01 - 2004/05)	1999/00 - 2004/05)	FUTURE FTES
188.1         11.0         18.4         29.4         2           78.3         8.1         26.2         34.3         1           0.3         1.0         1.7         2.8         1           9.9         3.8         0.0         3.8         1           17.1         2.3         1.8         4.0           29.1         1.0         10.4         11.4         11.4           25.4         0.0         23.9         23.9         2.6           3.0         1.0         1.6         2.6         2.6           44.6         10.5         17.1         27.6         2.6           44.6         10.5         17.1         27.6         2.0           44.6         10.5         11.0         11.0         11.0           44.6         10.5         11.0         11.0         22.0           44.0         5.8         16.2         22.0         2.0           41.0         5.8         15.5         9.5           1.7         0.0         0.8         0.8         0.8           1.7         1.7         1.7         1.7           1.1         1.0         1.7         1.7	Allergy & Clinical Immunology	3.8	3.0	2.7	5.7	9.5
78.3     8.1     26.2     34.3       0.3     1.0     1.7     2.8       9.9     3.8     0.0     3.8       17.1     2.3     1.8     4.0       17.1     2.3     4.0       25.4     0.0     23.9     23.9       25.4     0.0     23.9     23.9       26.0     1.0     1.6     2.6       26.0     0.0     11.0     11.0       26.0     0.0     11.0     11.0       26.0     0.0     11.0     11.0       26.0     0.0     11.0     11.0       26.0     0.0     0.8     0.0       27.0     2.0     2.0       27.0     2.0     2.0       27.0     2.0     2.0       27.0     0.0     0.8     0.8       27.1     1.7     3.2       27.4     1.7     3.2       27.4     1.7     23.0       108.6     10.0     8.0       3.5     0.0     8.0       4.0     6.5     8.0       5.7     1.7     1.7       10.1     0.0     6.5     8.0       6.5     6.5     8.0       8.0     8.0     8.0<	Anaesthesia	188.1	11.0	18.4	29.4	217.5
0.3     1.0     1.7     2.8       9.9     3.8     0.0     3.8       17.1     2.3     1.8     4.0       29.1     1.0     10.4     11.4       25.4     0.0     23.9     23.9       3.0     1.0     2.3     23.9       44.6     10.5     17.1     27.6       44.6     10.5     17.1     27.6       40.0     0.0     11.0     11.0       41.0     5.8     16.2     22.0       40.0     2.0     2.0     2.0       41.0     1.5     1.7     3.2       41.0     1.5     1.7     3.2       41.0     10.0     1.3     23.0       41.0     10.0     8.0     8.0       41.0     10.0     8.0     8.0       41.0     1.7     1.7     1.7       41.0     1.5     1.7     1.7       41.0     1.0     8.0     8.0       41.0     1.7     1.7     1.7       41.0     1.7     1.7     1.7       41.0     1.7     1.7     1.7       41.0     1.7     1.7     1.7       41.0     1.7     1.7     1.7       <	Cardiology	78.3	8.1	26.2	34.3	112.7
9.9     3.8     0.0     3.8       17.1     2.3     1.8     4.0       29.1     1.0     10.4     11.4       25.4     0.0     23.9     23.9       3.0     1.0     1.6     2.6       44.6     10.5     17.1     27.6       44.6     10.5     17.1     27.6       44.0     5.8     16.2     22.0       41.0     5.8     16.2     2.0       41.0     5.8     6.8     9.5       41.0     1.5     0.8     0.8       41.0     1.7     3.2       41.0     1.0     8.0     8.0       41.0     10.0     8.0     8.0       41.0     10.1     1.7     1.7       41.0     10.0     8.0     8.0       41.0     10.1     1.7     1.7       41.0     10.0     8.0     8.0       41.0     6.5     6.5	Child Protection	0.3	1.0	1.7	2.8	3.0
17.1     2.3     1.8     4.0       29.1     1.0     10.4     11.4       25.4     0.0     23.9     23.9       3.0     1.0     1.6     2.6       44.6     10.5     17.1     27.6       44.6     10.5     11.0     11.0       26.0     0.0     11.0     11.0       41.0     5.8     16.2     22.0       0.0     0.0     2.0     2.0       12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8       108.6     10.0     8.0     8.0       10.1     0.0     8.0     8.0       10.1     1.7     1.7       10.1     0.0     8.5     6.5	Clinical Asociate ("functional")	6.6	3.8	0.0	3.8	13.7
29.1     1.0     10.4     11.4       25.4     0.0     23.9     23.9       3.0     1.0     1.6     2.6       44.6     10.5     17.1     27.6       26.0     0.0     11.0     11.0       41.0     5.8     16.2     22.0       6.0     0.0     2.0     2.0       1.5     0.0     0.8     0.8       108.6     10.0     13.0     23.0       10.1     0.0     8.0     8.0       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7       10.1     1.7     1.7	Community Medicine	17.1	2.3	1.8	4.0	21.1
25.4     0.0     23.9     23.9       3.0     1.0     1.6     2.6       44.6     10.5     17.1     27.6       26.0     0.0     11.0     11.0       41.0     5.8     16.2     22.0       6.0     0.0     2.0     2.0       12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8       10.6     10.0     13.0     23.0       10.1     0.0     8.0     8.0       10.1     0.0     6.5     6.5       5.7     1.7     1.7     1.7       10.1     0.0     6.5     6.5     6.5	Critical Care Medicine	29.1	1.0	10.4	11.4	40.5
3.0     1.0     1.6     2.6       44.6     10.5     17.1     27.6       26.0     0.0     11.0     11.0       41.0     5.8     16.2     22.0       0.0     9.0     2.0     2.0       12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8       108.6     10.0     13.0     23.0       10.1     0.0     8.0     8.0       10.1     0.0     6.5     6.5	Dermatology	25.4	0.0	23.9	23.9	49.3
44.6       10.5       17.1       27.6         26.0       0.0       11.0       11.0         41.0       5.8       16.2       22.0         0.0       2.0       2.0       2.0         12.7       4.0       5.5       9.5         1.5       0.0       0.8       0.8         108.6       10.0       13.0       23.0         10.1       0.0       8.0       8.0         10.1       0.0       6.5       6.5	velopmental & Behavioral Pediatrics	3.0	1.0	1.6	2.6	5.6
26.0     0.0     11.0     11.0       41.0     5.8     16.2     22.0       0.0     9.0     2.0     2.0       12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8       21.4     1.5     1.7     3.2       31.7     0.0     5.7     5.7       108.6     10.0     8.0     8.0       10.1     0.0     8.0     8.0       5.7     0.0     6.5     6.5	Emergency Medicine	44.6	10.5	17.1	27.6	72.2
41.0     5.8     16.2     22.0       0.0     0.0     2.0     2.0       12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8       21.4     1.5     1.7     3.2       31.7     0.0     5.7     5.7       108.6     10.0     8.0     8.0       3.5     0.0     8.0     8.0       10.1     0.0     1.7     1.7       5.7     0.0     6.5     6.5	Endocrinology & Metabolism	26.0	0.0	11.0	11.0	37.0
0.0     2.0     2.0       12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8       21.4     1.5     1.7     3.2       31.7     0.0     5.7     5.7       108.6     10.0     13.0     23.0       10.1     0.0     8.0     8.0       10.1     0.0     6.5     6.5	Gastroenterology	41.0	5.8	16.2	22.0	63.0
12.7     4.0     5.5     9.5       1.5     0.0     0.8     0.8     0.8       21.4     1.5     1.7     3.2       31.7     0.0     5.7     5.7       108.6     10.0     13.0     23.0       10.1     0.0     8.0     8.0       10.1     0.0     6.5     6.5	Seneral Surgery/Transplant Surgery	0.0	0.0	2.0	2.0	2.0
1.5     0.0     0.8     0.8       21.4     1.5     1.7     3.2     2       31.7     0.0     5.7     5.7     3.2       108.6     10.0     13.0     23.0     13       3.5     0.0     8.0     8.0     13       10.1     0.0     1.7     1.7     1.7       5.7     0.0     6.5     6.5     6.5	Geriatric Medicine	12.7	4.0	5.5	9.5	22.2
21.4     1.5     1.7     3.2       31.7     0.0     5.7     5.7       108.6     10.0     13.0     23.0     1       3.5     0.0     8.0     8.0     8.0       10.1     0.0     1.7     1.7     1.7       5.7     0.0     6.5     6.5	vnecological Oncology ("functional")	1.5	0.0	0.8	0.8	2.3
31.7     0.0     5.7     5.7       108.6     10.0     13.0     23.0       3.5     0.0     8.0     8.0       10.1     0.0     1.7     1.7       5.7     0.0     6.5     6.5	Hematology	21.4	1.5	1.7	3.2	24.6
108.6     10.0     13.0     23.0       3.5     0.0     8.0     8.0       10.1     0.0     1.7     1.7       5.7     0.0     6.5     6.5	Infectious Diseases	31.7	0.0	5.7	5.7	37.4
3.5     0.0     8.0     8.0       10.1     0.0     1.7     1.7       5.7     0.0     6.5     6.5	Internal Medicine	108.6	10.0	13.0	23.0	131.7
10.1 0.0 1.7 1.7 1.7 1.7 5.7 6.5 6.5	Medical Biochemistry	3.5	0.0	8.0	8.0	11.5
5.7 0.0 6.5 6.5	Medical Genetics	10.1	0.0	1.7	1.7	11.8
	Medical Microbiology	5.7	0.0	6.5	6.5	12.2

FTE values are rounded to one decimal place

IMMEDIATE FTE NEED = Additional FTEs required in 1999/2000

ADDITIONAL FTE NEEDS = FTEs, over and above IMMEDIATE NEEDS, required during 2000/01 - 2004/05

IMMEDIATE FTE NEEDS + ADDITIONAL FTE NEEDS = TOTAL FTE NEEDS

CURRENT FTES + IMMEDIATE FTES + ADDITIONAL FTES = FUTURE FTES

GP SPECIAL SKILL	CURRENT FTES	IMMEDIATE FTE NEED (1999/2000)	ADDITIONAL FTE NEEDS (2000/01 - 2004/05)	TOTAL FTE NEEDS (1999/00 - 2004/05)	FUTURE FTES
Medical Oncology ("functional")	27.8	3.3	31.0	34.3	62.1
Medical Staff Admin.	6.0	0.0	1.4	1.4	2.3
Neonatology	10.8	1.0	1.1	2.0	12.8
Neonatology/Perinatal Medicine	9.2	0.0	0.5	0.5	9.7
Nephrology	24.9	3.5	10.2	13.7	38.6
Neurology	45.6	4.0	16.3	20.3	66.0
Neurosurgery	19.3	3.0	1.6	4.6	23.9
Nuclear Medicine	5.7	0.0	0.0	0.0	5.7
Obstetrics/Gynecology	125.9	14.3	15.0	29.3	155.2
Occupational Medicine	13.9	1.0	1.0	2.0	15.9
Oncological Pathology ("functional")	4.4	1.9	1.3	3.2	7.6
Opthalmology	71.3	4.8	10.1	14.9	86.2
Oral Max Surgeon	0.0	0.0	3.0	3.0	3.0
Otolaryngology	37.8	2.1	20.2	22.4	60.2
Pathology - Anatomic	39.0	1.0	23.4	24.4	63.4
Pathology - General	23.0	3.7	9.6	13.2	36.2
Pathology - Hematological	5.1	0.0	11.5	11.5	16.6
Pathology - Neurological	10.3	0.0	0.0	0.0	10.3
Pediatric Adolescent Medicine	2.0	0.0	0.8	0.8	2.8
Pediatric Cardiology	11.6	0.0	0.0	0.0	11.6
Pediatric Cardiovascular Surgery	2.0	0.0	1.3	1.3	3.3
Pediatric Community School Health	1.0	0.0	0.0	0.0	1.0

FTE values are rounded to one decimal place
IMMEDIATE FTE NEED = Additional FTEs required in 1999/2000
ADDITIONAL FTE NEEDS = FTEs, over and above IMMEDIATE NEEDS, required during 2000/01 - 2004/05
IMMEDIATE FTE NEEDS + ADDITIONAL FTE NEEDS = TOTAL FTE NEEDS
CURRENT FTEs + IMMEDIATE FTEs + ADDITIONAL FTEs = FUTURE FTEs

GP SPECIAL SKILL	CURRENT FTES	IMMEDIATE FTE NEED (1999/2000)	ADDITIONAL FTE NEEDS (2000/01 - 2004/05)	TOTAL FTE NEEDS (1999/00 - 2004/05)	FUTURE FTES
Pediatric Critical Care	5.3	0.0	1.3	1.3	6.5
Pediatric Emergency Medicine	0.0	7.0	1.0	8.0	8.0
Pediatric Endocrinology	2.0	0.0	0.5	0.5	2.5
Pediatric Gastroenterology	7.9	0.0	1.6	1.6	9.6
Pediatric General Academic	0.5	0.0	2.5	2.5	3.0
Pediatric General Hospitalist	0.0	2.0	0.0	2.0	2.0
Pediatric Hematology	10.1	0.0	1.2	1.2	11.3
Pediatric Immunology & Allergy	8,4	0.0	0.1	0.1	2.0
Pediatric Infectious Diseases	14.0	0.0	0.0	0.0	14.0
Pediatric Metabolic Medicine	0.5	0.0	0.4	0.4	6.0
Pediatric Nephrology	14.6	0.0	0.0	0.0	14.6
Pediatric Neurology	2.1	2.0	0.4	2.4	£.
Pediatric Nutrition	0.0	0.0	1.0	1.0	1.0
Pediatric Oncology ("functional")	7.3	0.5	1.0	1.5	8.8
Pediatric Palliative Care	0.0	1.0	0.3	1.3	1.3
Pediatric Rehab. Med.	1.2	0.0	1.3	1.3	2.5
Pediatric Respiratory Medicine	11.3	2.0	-1.3	0.8	12.0
Pediatric Rheumatology	0.5	0.0	0.5	0.5	1.0
Pediatrics - General	115.4	2.0	15.1	17.1	132.4
Physical Medicine/Rehab	22.1	2.0	15.8	17.8	39.9
Plastic Surgery	41.3	8.0	5.1	5.8	47.1
Psychiatry	241.4	16.5	47.4	63.9	305.3

ADDITIONAL FTE NEEDS = FTEs, over and above IMMEDIATE NEEDS, required during 2000/01 - 2004/05 IMMEDIATE FTE NEEDS + ADDITIONAL FTE NEEDS = TOTAL FTE NEEDS CURRENT FTES + IMMEDIATE FTES + ADDITIONAL FTES = FUTURE FTES IMMEDIATE FTE NEED = Additional FTEs required in 1999/2000 FTE values are rounded to one decimal place

GP SPECIAL SKILL	CURRENT FTES	IMMEDIATE FTE NEED (1999/2000)	ADDITIONAL FTE NEEDS (2000/01 - 2004/05)	TOTAL FTE NEEDS (1999/00 - 2004/05)	FUTURE FTES
Radiation Oncology	30.2	2.8	6.9	7.6	39.9
Radiology - Diagnostic	165.0	16.5	22.5	39.0	204.0
Radiology/Nuclear Medicine	6.8	0.0	3.0	3.0	9.8
Respiratory Medicine	33.7	0.1	12.3	12.4	46.1
Rheumatology	25.6	2.8	1.3	4.0	29.7
Sessional Fees (consultant)	3.5	0.0	1.1	1.1	4.6
Surgery - Cardiovascular & Thorasic	22.1	2.0	5.0	7.0	29.1
Surgery - General	113.2	5.0	22.6	27.6	140.8
gery - General (Transplant Surgery)	2.0	0.0	1.0	1.0	3.0
Surgery - Orthopedic	85.8	11.3	15.1	26.5	112.3
Surgery - Pediatric General	10.8	0.0	1.7	1.7	12.5
Surgery - Vascular	15.4	1.0	1.1	2.1	17.4
Surgical Oncology ("functional")	1.7	6.0	9.0	1.6	B. B.
Urology	47.4	3.1	6.7	8.6	57.3

FTE values are rounded to one decimal place
IMMEDIATE FTE NEED = Additional FTEs required in 1999/2000
ADDITIONAL FTE NEEDS = FTEs, over and above IMMEDIATE NEEDS, required during 2000/01 - 2004/05
IMMEDIATE FTE NEEDS + ADDITIONAL FTE NEEDS = TOTAL FTE NEEDS
CURRENT FTEs + IMMEDIATE FTEs + ADDITIONAL FTEs = FUTURE FTEs

**APPENDIX VI** 

### PROVINCIAL SPECIALIST PHYSICIAN IMMEDIATE NEED FTEs (as identified by PRPC) - ALL HEALTH AUTHORITIES COMBINED

IMMEDIATE NEED	IMMEDIATE NEED
(in FTEs)	(by %)

MEDICAL SPECIALISTS	135.6	8.4%
- Allergy & Clinical Immunology	3.0	79.2%
- Geriatric Medicine	4.0	31.6%
- Emergency Medicine	10.5	23.5%
- Gastroenterology	5.8	14.2%
- Nephrology	3.5	14.1%
- Community Medicine	2.3	13.2%
- Medical Oncology	3.3	11.9%
- Rheumatology	2.8	10.7%
- Cardiology	8.1	10.4%
- Diagnostic Radiology	16.5	10.0%
- Radiation Oncology	2.8	9.3%
- Internal Med. (General)	10.0	9.2%
- Physical Med. & Rehab.	2.0	9.1%
- Neurology	4.0	8.8%
- Pediatrics	19.4	8.2%
- Occupational Medicine	1.0	7.2%
- Hematology	1.5	7.0%
- Psychiatry	16.5	6.8%
- Lab Medicine	6.5	6.5%
- Anesthesia	11.0	5.8%
- Critical Care Medicine	1.0	3.4%
- Respiratory Medicine	0.1	0.3%
- Dermatology	0.0	0.0%
- Endocrinology	0.0	0.0%
- Infectious Disease	0.0	0.0%
- Nuclear Medicine	0.0	0.0%

SURGICAL SPECIALISTS	48.4	8.1%
- Neurosurgery	3.0	. 15.5%
- Orthopedic Surgery	11.3	13.2%
- Obstetrics/Gynecology	14.3	11.4%
- Cardiothoracic Surgery	2.0	9.1%
- Ophthalmology	4.8	6.8%
- Urology	3.1	6.5%
- Otolaryngology	2.1	5.6%
- General Surgery	6.9	4.9%
- Plastic Surgery	0.8	1.8%

26.0%

Total Specialist IMMEDIATE NEED FTEs:

187.8

<sup>&</sup>quot;IMMEDIATE NEED by % = (IMMEDIATE NEED FTEs/CURRENT FTEs)

<sup>&#</sup>x27;all FTEs are rounded to one decimal place

**APPENDIX VII** 

### ASSUMPTIONS USED FOR FIVE-YEAR PHYSICIAN FTE PROJECTIONS

Death rates - recent annual averages for Alberta, 1995-1997 (Source: CMA).

Retirement rates - recent annual averages for Alberta GP/FPs, Medical Specialists, and Surgical Specialists, 1995-1997 (Source: CMA).

Age/gender distributions of new post-M.D. trainees, physicians moving abroad and physicians returning from abroad, are all based on CMA rates, averaged from 1995-1997.

Assumptions for FTEs by age and sex:

		GP/FPs		MEDIC	AL SPECIAL	ISTS	SURGIO	CAL SPECIAL	SITS
AGE	MALE	FEMALE	ALL	MALE	FEMALE	ALL	MALE	FEMALE	ALL
	0.770	0.573	0.673	0.921	0.488	0.841	0.632	0.400	0.554
30 or less	0.770	0.627	0.762	0.860	0.715	0.814	0.840	0.710	0.819
31-35	0.890	0.694	0.850	1.024	0.749	0.933	0.975	0.817	0.942
36-40	1.072	0.791	0.977	1.041	0.819	0.978	0.992	0.740	0.955
41-45	1.106	0.848	1.028	1.073	0.827	1.011	1.103	0.901	1.082
46-50	1.007	0.880	1.053	0.946	0.948	0.946	1.015	0.660	0.993
51-55	1.022	0.944	1.011	0.918	0.648	0.883	0.992	0.900	0.992
56-60	0.906	0.709	0.876	0.908	0.977	0.911	0.870	0.730	0.870
61-65	0.709	0.709	0.689	0.642	0.497	0.630	0.516	0.460	0.516
66-70	4		0.560	0.496	0.870	0.521	0.266		0.266
71-75	0.555	271.00	0.201	0.380	0.340	0.340	0.186	0.180	0.186
76-80	0.216		0.201	0.413	0.000	0.000	0.130		0.130
81+	0.184	0.060						0.765	0.901
ALL	0.977	0.722	0.892	0.968	0.785	0.925	0.917	0.703	0.50

Sources:

Alberta Health Care Insurance Claims data

Canadian Medical Association

### Methodology - How does the Physician Resource Projection Model Work?

- a) The Base Stock of the physician group under study (i.e. GP/FPs) are entered into a spreadsheet by individual age and gender.
- b) The base stock is adjusted up and down for inflows and outflows of physicians as follows:
  - New Post-M.D. grads are added to the base stock of physicians. If we are assuming 66.3% X 72 = 47.7 new Alberta GP/FP trainees will enter the physician stock each year, then a certain proportion of this '47.7' will be added to each age/gender combination in the base stock. These proportions are based on distributions calculated from the CMA.
  - Physicians moving abroad and physicians returning from abroad are calculated in a similar way, once again based on rates obtained from the CMA. For example, if we are assuming 40.5 GP/FPs will move abroad each year, then these '40.5' GP/FPs are distributed accordingly across all age/sex combinations based on the distributions used from the CMA. The physician stock, after having already been adjusted for new post-M.D. graduates, will be adjusted once again to account for changes in physicians moving abroad and returning from abroad.
  - Inter-provincial migration of physicians (and immigration) is calculated in a similar way, except the distribution of new physicians coming from other provinces are based on the current age/gender distribution of the physician stock. Assuming an inter-provincial migration of +14.5 GP/FPs per year, these '14.5' GP/FPs will be added on to the stock according to the current age/gender distribution of the GP/FP stock.
  - Deaths and Retirements are calculated based on rates from the CMA. Based on age and gender, a physician is assigned a probability of both dying and retiring in a given year. The base stock of physicians is adjusted downwards accordingly.
  - Once all of these inflows and outflows have been accounted for, each physician remaining in the base stock is assigned an FTE from the above table according to age and gender. The stock of physicians is then aged by one year and the process is repeated for each additional year.

### STATUS QUO ASSUMPTIONS USED FOR FIVE-YEAR PHYSICIAN SUPPLY PROJECTIONS

	RETENTION RATE OF ALBERTA POST-M.D. GRADS (%)	PROJECTED ALBERTA POST-M.D. GRADS PER YEAR	RETENTION RATE OF OTHER CANADIAN POST-M.D. GRADS (%)	PROJECTED OTHER CANADIAN POST-M.D. GRADS PER YEAR	PROJECTED NEW POST-M.D. TRAINEES PRACTICING IN ALBERTA PER YEAR	RETURNS FROM ABOAD PER YEAR	MOVING ABROAD PER YEAR	MALES EXITING POST-M.D. TRAINING	NET INTER- PROVINCIAL MIGRATION PER YEAR	IMMIGRATION PER YEAR (PRE ARRANGED EMPLOYMENT)
3P/FPs	66.3	72	2.1	969	62.4	21.5	40.5	4	14.5	2.5
MEDICAL SPECIALISTS	63.0	11	1.4	609	57.0	16.0	21.0	59	15.0	1.8
- Anesthesia	63.2	6.4	2.1	73	5.6	1.5	2.0	69	1.8	0
- Dermatology	75	8.2	5.3	1.2	1.3	0	0.5	71	0.3	0
- Internal Medicine	44	22.9	1.4	216	12.4	5.5	9.0	61	4.5	0
-Allergy & Clin. Immunology					*					
-Cardiology	25	2.7	0	27	0.7	0.7	1.1	93	9.0	0
-Critical Care Medicine										
-Endocrinology	0	1.5	5.0	7.0	0.4	0.3	0.5	25	0.2	0
-Gastroenterology	16.7	2.5	0	13.5	0.4	0.4	0.7	26	0.3	0
-Geriatric Medicine		4	*	*	*	*				*
-Hematology		*	*	*						
-Infectious Disease			*						*	
-Internal Med (General)	77.3	6.0	3.3	59	9.9	2.0	3.2	22	1.6	0
-Medical Oncology	43.0	2.5	1.4	20	1.8	0.2	0.3	43	0.1	0
-Neohrahav	33.3	3.0	0	19	1.0	0.2	0.3	20	0.1	0
-Respiratory Medicine	20	2.2	0	16.2	1.1	0.4	0.7	80	0.3	0
-Rheumatology	33.3	0	0	9.5	0	0.3	0.4	20	0.2	0
- Neurology	20	2.0	3.1	22.4	1.7	0	0.5	55	0.5	0
- Pediatrics	45.2	10.8	0.7	85.8	1.7	1.5	2.0	43	1.7	0
- Physical Med. & Rehab.	66.7	2.0	4.2	0.6	1.7	0.5	0.5	40	0.2	0
- Psychiatry	80.0	8.0	1.0	93.0	7.3	1	2	22	2.1	0
- Community Medicine	80.0	1.5	1.4	13.3	1.4	0	0.5	29	0.2	0
- Emergency Medicine	46.0	4.4	5.1	12.4	2.7	0.5	1.5	55	0.4	0
- Occupational Medicine	*								•	
- Diagnostic Radiology	40.0	6.4	1.4	53.6	3.3	3.0	1.5	74	1,5	0
- Nuclear Medicine	0	0.7	1.4	3.5	0.05	0.5	0	100	0.1	0
- Radiation Oncology	33.3	2	1.4	10.6	0.8	0.5	0	02	0.3	0
- Lab Medicine	35.7	2	1.4	34.6	2.3	1,5	0.5	20	1.2	0
SURGICAL SPECIALIST	34.7	31.4	1.7	278.4	15.6	7.5	12.5	69	5.5	0.7
- General Surgery	31.8	8.6	1.5	89.2	4.1	1.5	2.0	11	1.3	0
- Cardiothoracic Surgery	0	1.2	14.3	9	6.0	0.5	0	100	0.2	0
- Neurosurgery	14.3	2.6	0	13.6	0.4	0.5	0.5	88	0.2	0
- Obstetrics/Gynecology	55	6.8	0.5	321.0	5.4	0	2.5	28	1.1	0
- Otolarvnaology	0	1.6	0	19.6	0	0.5	1.5	88	0.3	0
- Orthopedic Surgery	28.5	5.4	2.8	41.2	2.7	3.0	3.5	79	6.0	0
- Ophthalmology	33.3	1.6	1.3	20.0	8.0	0.5	1.5	75	0.8	0
- Plastic Surgery	66.7	1.6	0	12.2	1.1	0	0	75	0.3	0
	000	3.	47	18.8	1.4	-	0	88	0.4	0

**APPENDIX VIII** 

### GENERAL PRACTITIONER/FAMILY PHYSICIAN RESOURCE PLAN WORKING GROUP DEFINITION OF GENERAL PRACTITIONER/FAMILY PHYSICIAN

### General Practitioners/Family Physicians

Fundamentally, most general practitioners (GP)/family physicians can be defined as possessing the following basic characteristics:

- Licensed to practice medicine in Alberta
- · Community based, i.e. have a primary care site serving the population
- Provide primary care to a definable population
- Do not possess specialty certification from the Royal College of Physicians & Surgeons

However, it is proposed that general practitioners/family physicians be defined as following into one of the following three categories, a "generalist" GP/family physician, a "generalist" GP/family physician with additional skills or characteristics, or a GP/family physician who concentrates on a complex skill set:

- "Generalist" GP/family physician providers of community-based primary care who offer to provide the following bundle of services across a wide spectrum of age groups:
- Health assessments
- · Illness prevention and health promotion
- Intervention for episodic illness
- Primary reproductive care
- Management of chronic illnesses
- · Care of the majority of illnesses
- Support of the patient's education/support for self
- Support of hospital care, in home and chronic care (i.e. nursing homes, group homes, assisted living)
- Arrangements for 24 hour, seven days per week triage to meet the needs of the patient population
- Service coordination and referral, e.g. Rehabilitation, palliative care, diagnostics
- Maintenance of a comprehensive health record
- Advocacy role for patients, families, the community and the health system
- Primary mental health care

- 2. "Generalist" GP/family physician with additional skills or characteristics providers of community-based primary care who provided the bundle of services listed above, and in addition provide secondary care (in addition to primary care), e.g. have an institutional affiliation for medical care in hospitals and long term care facilities, and may also:
- Teach/train, conduct research, perform administrative functions, and/or,
- Provide additional specialty services, e.g. please refer to the examples listed below
- GP/family physician who concentrates on a complex skill set providers of other professional work that includes the use of complex skill sets and who does not provide the bundle of services listed above. For example:
- adolescent care
- rehabilitation services
- palliative care support
- sports medicine
- occupational medicine
- geriatric medicine
- administration
- teaching/research
- insurance work (third party, WCB)
- Transport Canada
- forensic medicine
- hospitalist services
- anaesthesia
- obstetrics
- surgery
- emergency medicine
- mental health/psychotherapy